Figure 1: How Total Travel Cost Management (TTCM) Works

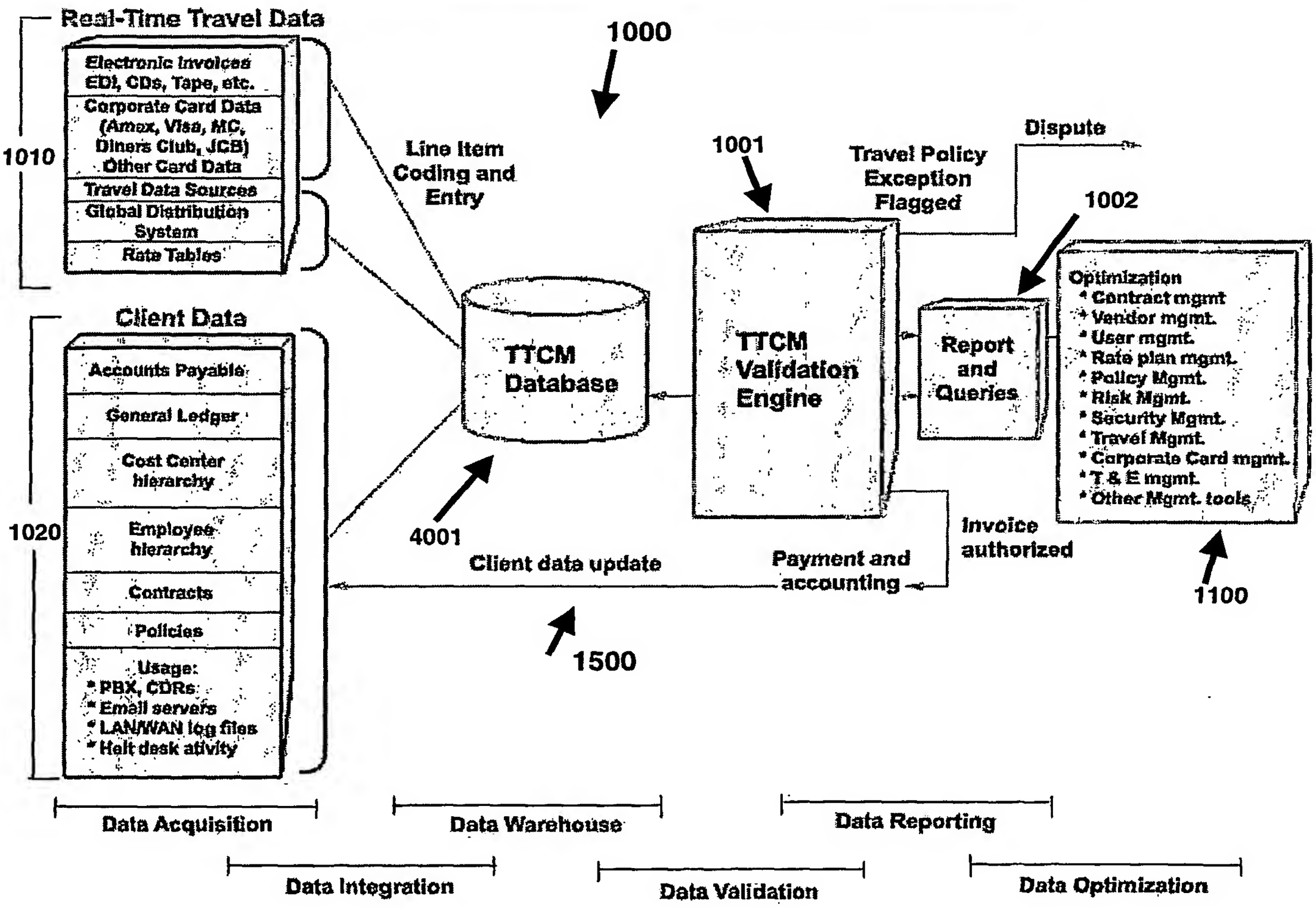


Figure2: Total Travel Cost Management (TTCM) Service Lifecycle

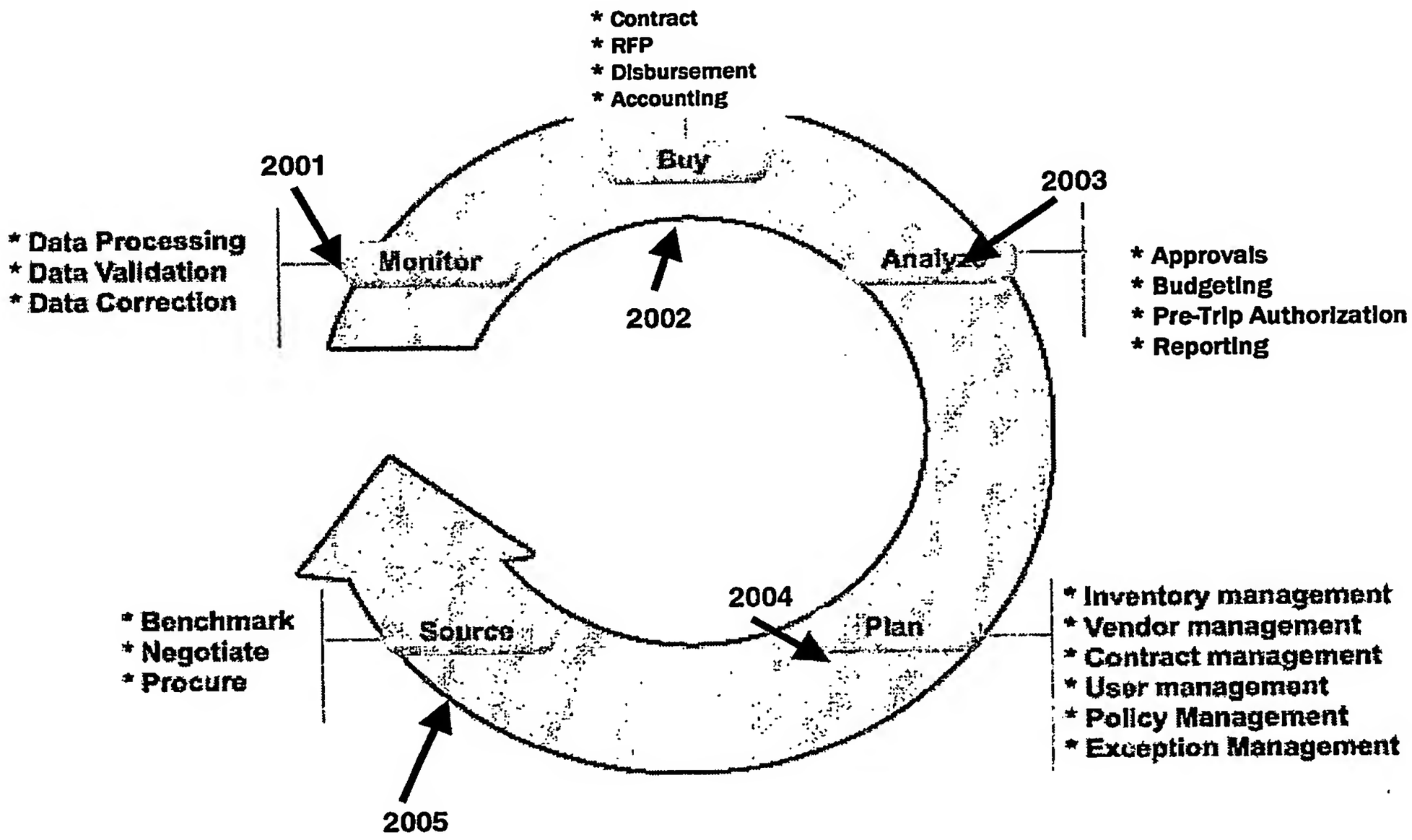


Figure 3

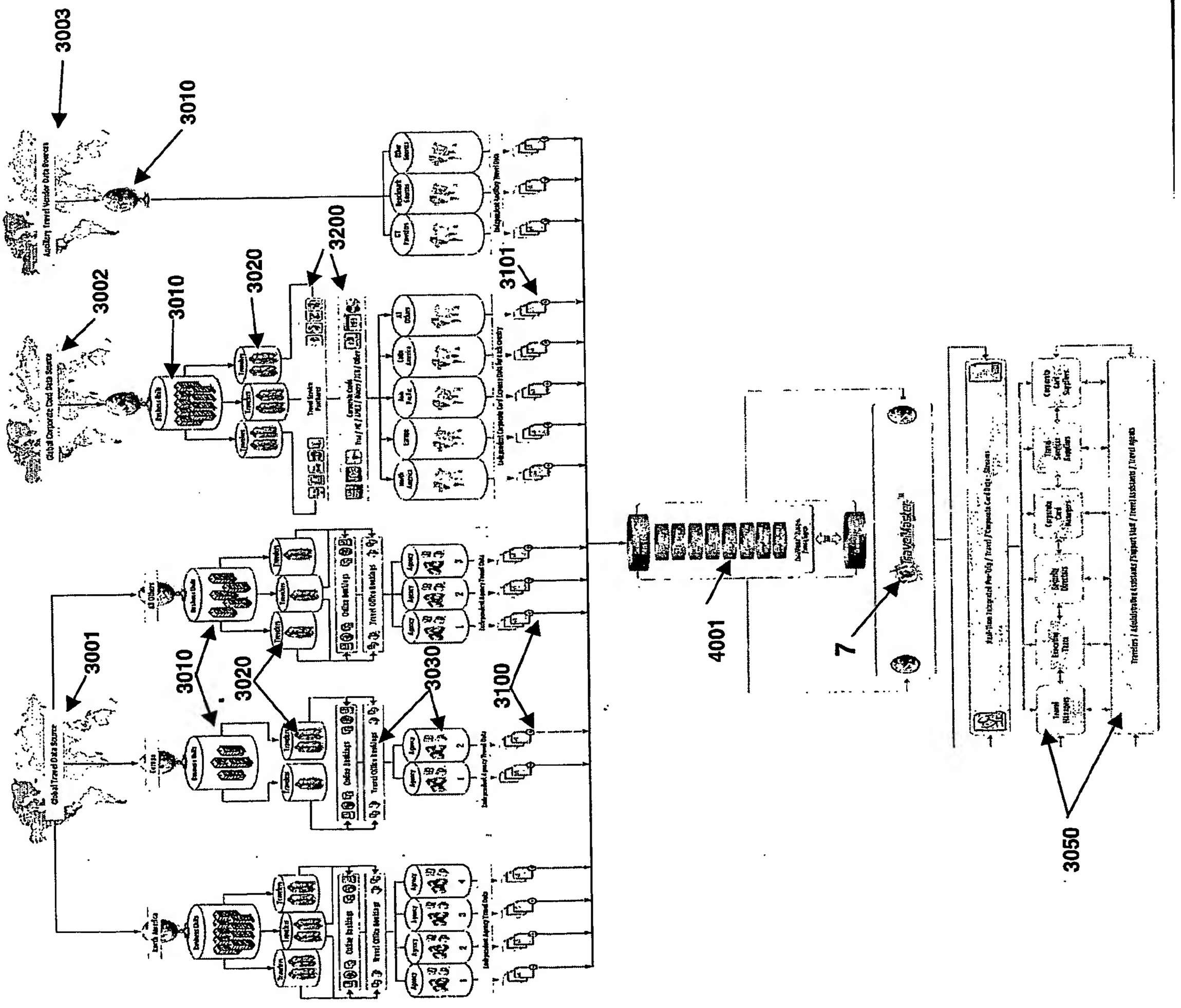

3003
3010
3002
3010
3020
3200
3101
3001
3010
3020
3030
3100
4001
7
3050

Figure 4

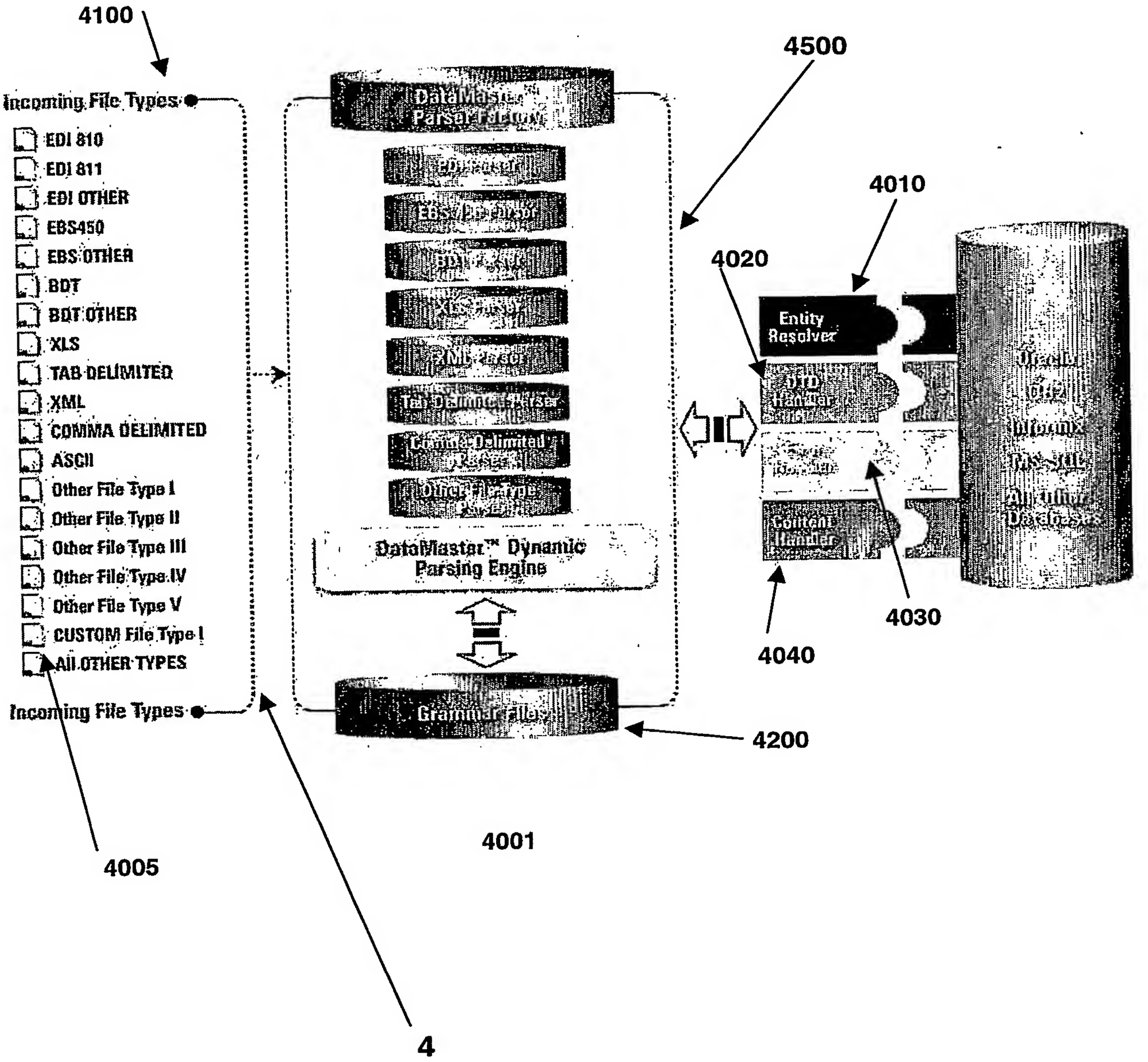

4100
Incoming File Types
EDI 810
EDI 811
EDI OTHER
EBS450
EBS OTHER
BDT
BDT OTHER
XLS
TAB DELIMITED
XML
COMMA DELIMITED
ASCII
Other File Type I
Other File Type II
Other File Type III
Other File Type IV
Other File Type V
CUSTOM File Type I
All OTHER TYPES
Incoming File Types
4005
4500
DataMaster™ Parser Factory
EBS Parser
BDT Parser
XLS Parser
XML Parser
Tab Delimited Parser
Comma Delimited Parser
Other File Type
DataMaster™ Dynamic Parsing Engine
Grammar Files
4001
4200
4010
4020
Entity Resolver
DTD Handler
Content Handler
4030
4040
4

Figure 5

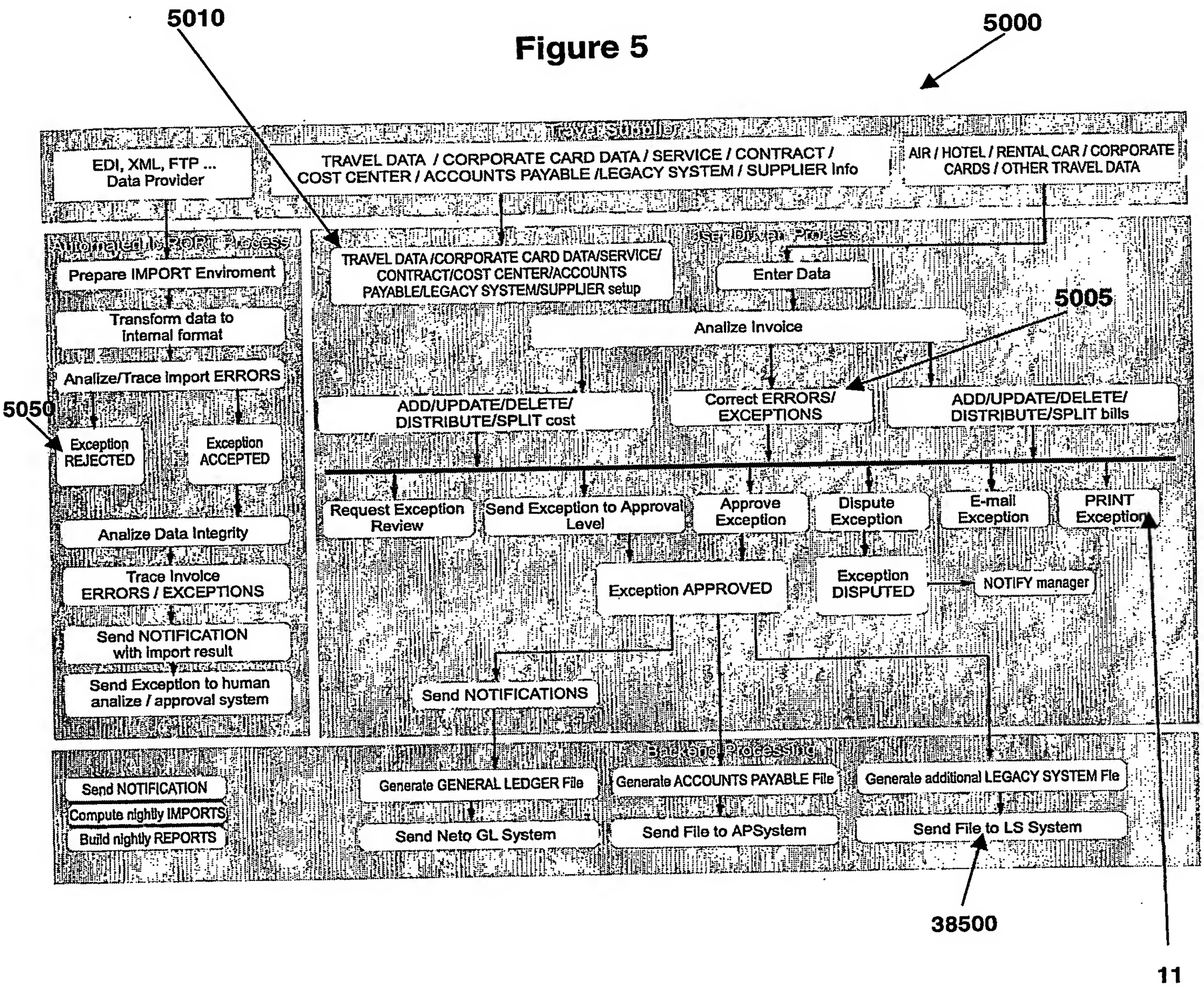

5010
5000
Travel Supplier
EDI, XML, FTP ...
Data Provider
TRAVEL DATA / CORPORATE CARD DATA / SERVICE / CONTRACT / COST CENTER / ACCOUNTS PAYABLE /LEGACY SYSTEM / SUPPLIER Info
AIR / HOTEL / RENTAL CAR / CORPORATE CARDS / OTHER TRAVEL DATA
Automated LS PORT Process
Prepare IMPORT Enviroment
Transform data to Internal format
Analize/Trace Import ERRORS
5050
Exception REJECTED
Exception ACCEPTED
Analize Data Integrity
Trace Invoice ERRORS / EXCEPTIONS
Send NOTIFICATION with import result
Send Exception to human analize / approval system
User Driven Process
TRAVEL DATA /CORPORATE CARD DATA/SERVICE/ CONTRACT/COST CENTER/ACCOUNTS PAYABLE/LEGACY SYSTEM/SUPPLIER setup
Enter Data
5005
Analize Invoice
ADD/UPDATE/DELETE/ DISTRIBUTE/SPLIT cost
Correct ERRORS/ EXCEPTIONS
ADD/UPDATE/DELETE/ DISTRIBUTE/SPLIT bills
Request Exception Review
Send Exception to Approval Level
Approve Exception
Dispute Exception
E-mail Exception
PRINT Exception
Exception APPROVED
Exception DISPUTED
NOTIFY manager
Send NOTIFICATIONS
Backend Processing
Send NOTIFICATION
Compute nightly IMPORTS
Build nightly REPORTS
Generate GENERAL LEDGER File
Send Neto GL System
Generate ACCOUNTS PAYABLE File
Send File to APSystem
Generate additional LEGACY SYSTEM File
Send File to LS System
38500

Figure 6

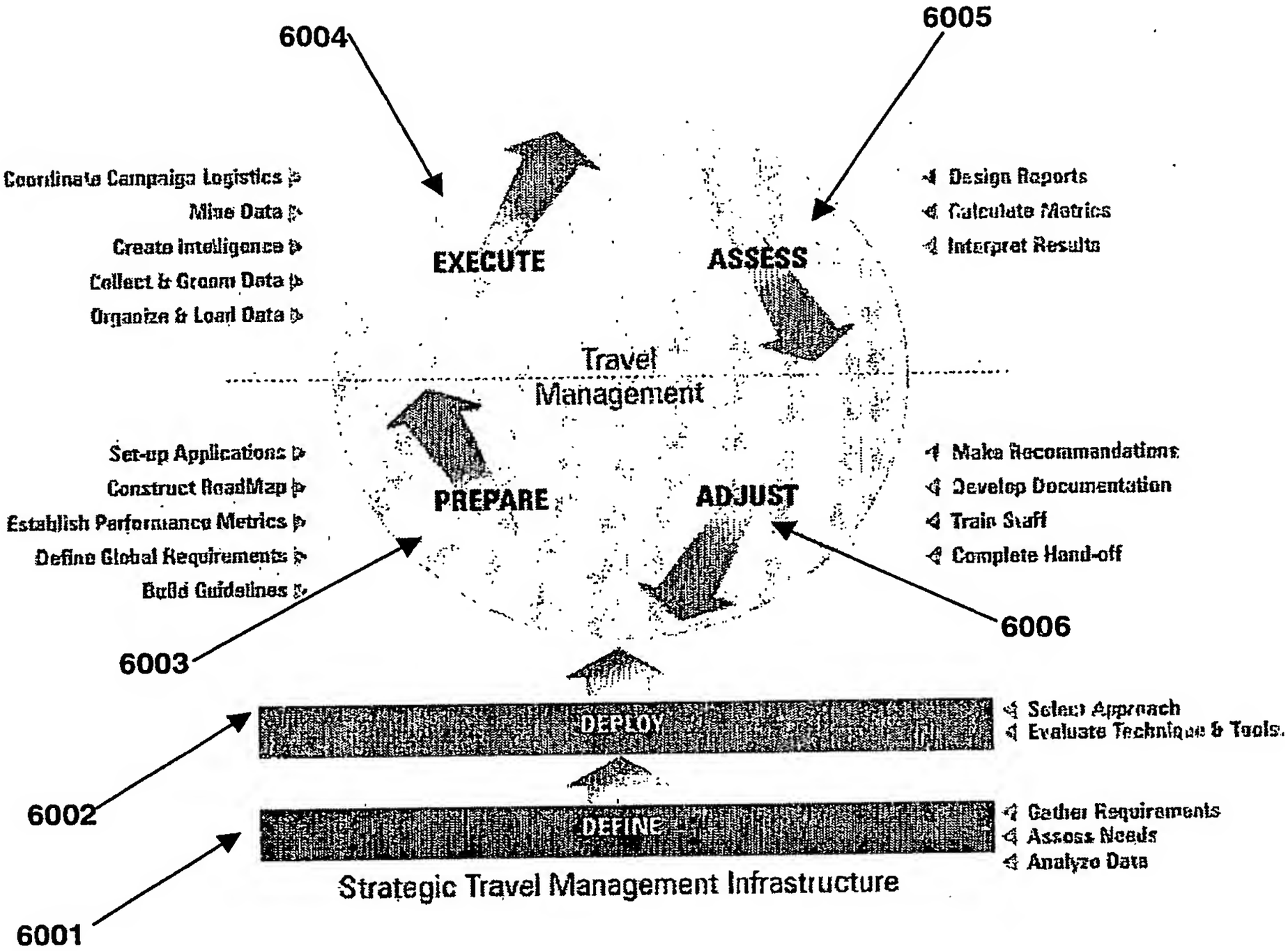

6004
6005
Coordinate Campaign Logistics
Mine Data
Create Intelligence
Collect & Groom Data
Organize & Load Data
EXECUTE
ASSESS
Design Reports
Calculate Metrics
Interpret Results
Travel Management
Set-up Applications
Construct RoadMap
Establish Performance Metrics
Define Global Requirements
Build Guidelines
PREPARE
ADJUST
Make Recommendations
Develop Documentation
Train Staff
Complete Hand-off
6003
6006
DEPLOY
Select Approach
Evaluate Techniques & Tools
6002
DEFINE
Gather Requirements
Assess Needs
Analyze Data
Strategic Travel Management Infrastructure
6001

Figure 7

Open Application Architecture

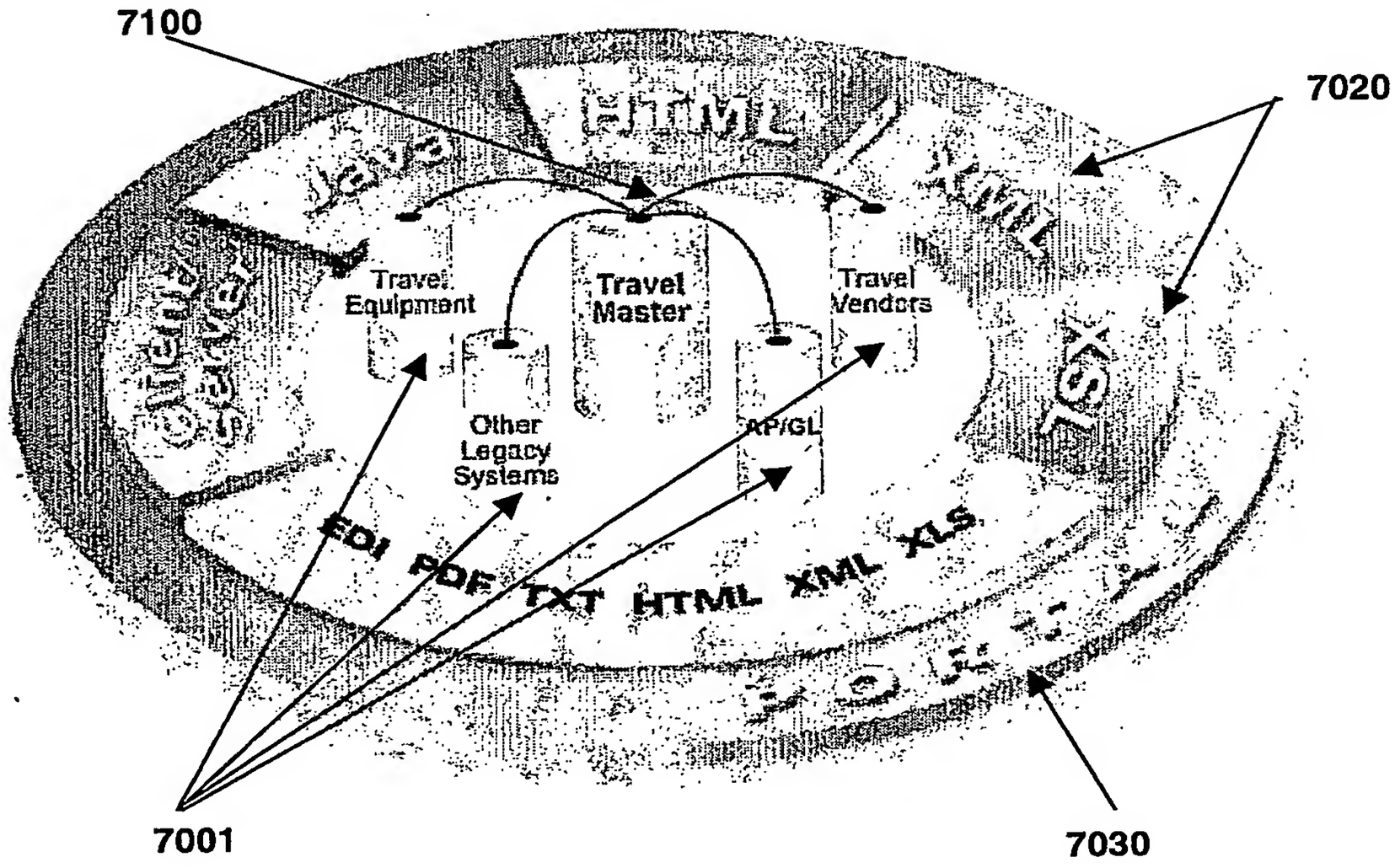


FIGURE 8

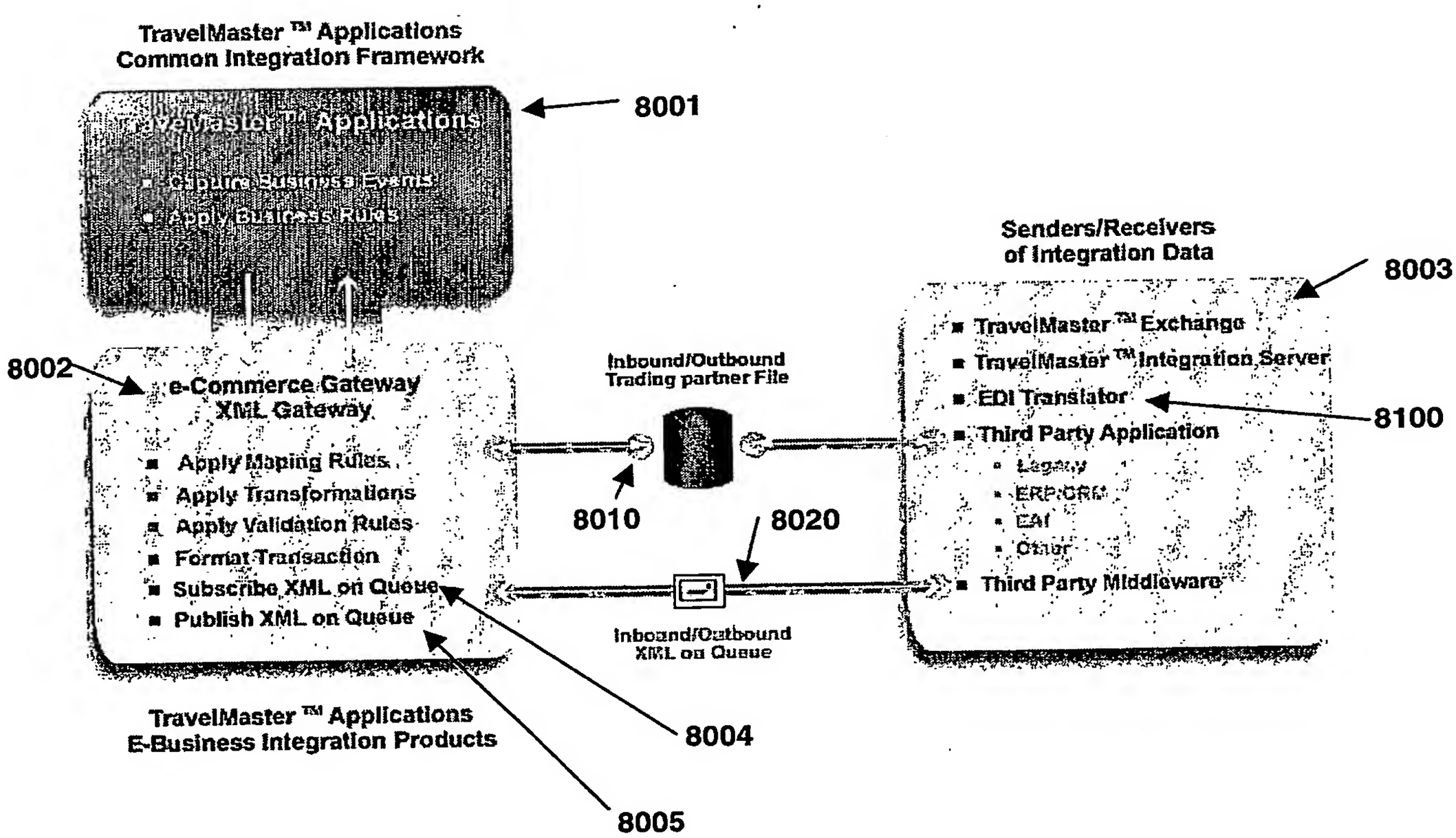

TravelMaster ™ Applications
Common Integration Framework
TravelMaster ™ Applications
Capture Business Events
Apply Business Rules
8001
8002
e-Commerce Gateway
XML Gateway
Apply Maping Rules
Apply Transformations
Apply Validation Rules
Format Transaction
Subscribe XML on Queue
Publish XML on Queue
Inbound/Outbound
Trading partner File
8010
8020
Inbound/Outbound
XML on Queue
Senders/Receivers
of Integration Data
8003
TravelMaster ™ Exchange
TravelMaster ™ Integration Server
EDI Translator
8100
Third Party Application
Legacy
ERP/CRM
EAI
Other
Third Party Middleware
TravelMaster ™ Applications
E-Business Integration Products
8004
8005

FIGURE 9

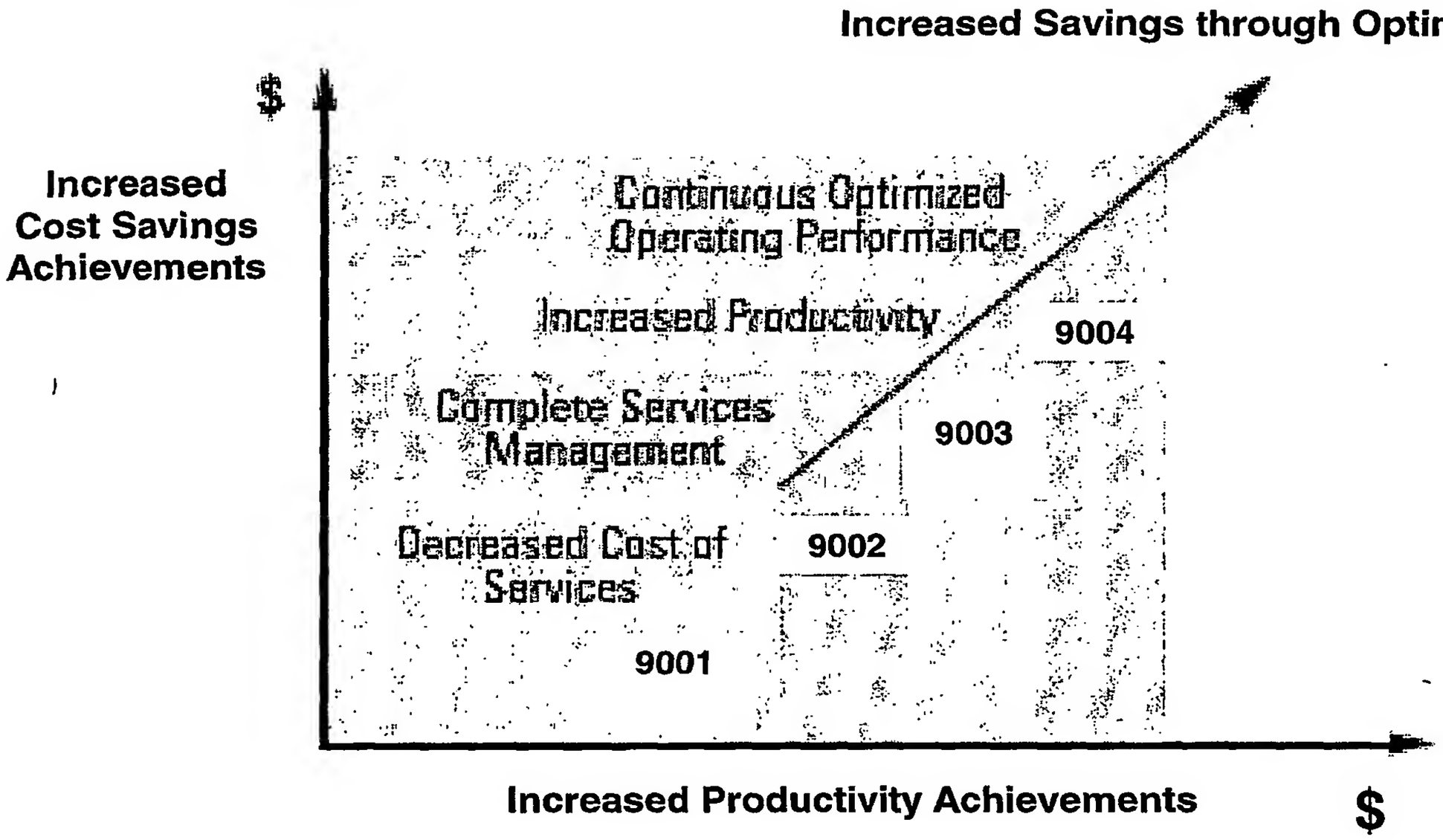

Increased Savings through Optimization
$
Increased Cost Savings Achievements
Continuous Optimized Operating Performance
Increased Productivity
Complete Services Management
Decreased Cost of Services
9001
9002
9003
9004
Increased Productivity Achievements
$

FIGURE 10

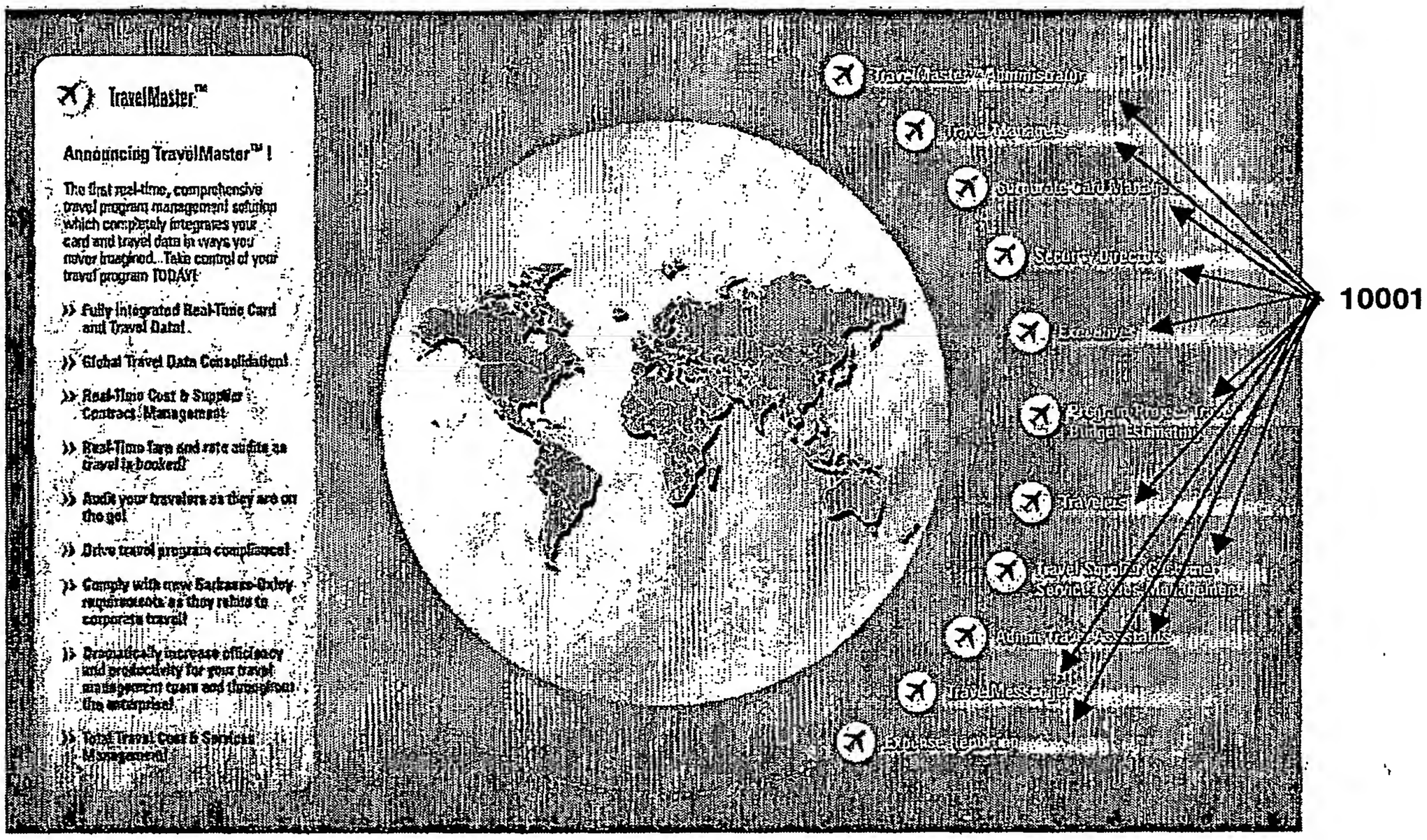
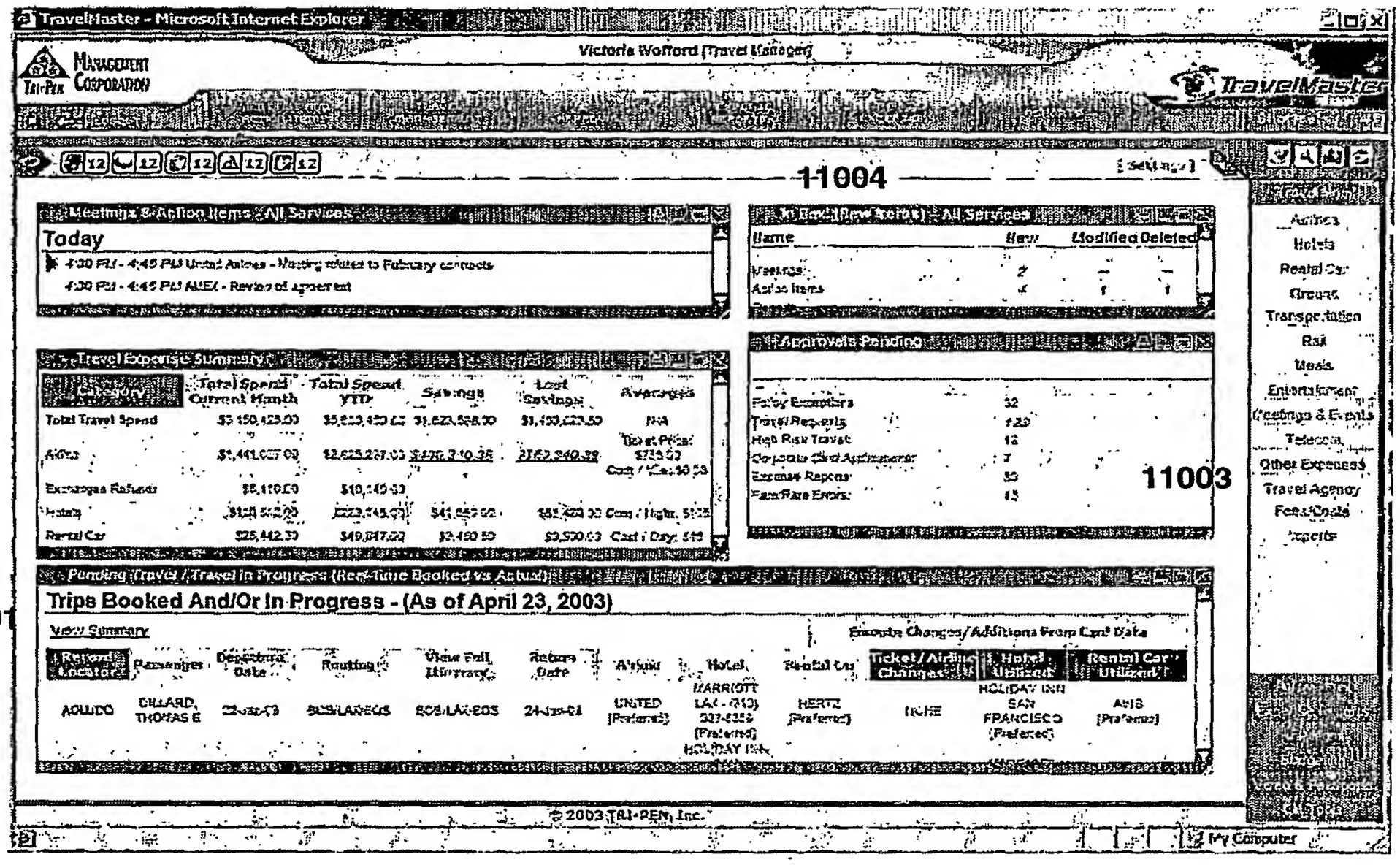

TravelMaster™
Announcing TravelMaster™ !
The first real-time, comprehensive travel program management solution which completely integrates your card and travel data in ways you never imagined...Take control of your travel program TODAY!
Fully Integrated Real-Time Card and Travel Data!
Global Travel Data Consolidation!
Real-Time Cost & Supplier Contract Management
Real-Time fare and rate audits as travel is booked!
Audit your travelers as they are on the go!
Drive travel program compliance!
Comply with new Sarbanes-Oxley requirements as they relate to corporate travel!
Dramatically increase efficiency and productivity for your travel management team and throughout the enterprise!
Total Travel Cost & Services Management!
TravelMaster™ Administrator
Travel Managers
Security Directors
Executives
Program Project Travel Budget Estimating
Travelers
Travel Support Customer Service Issues Management
Admin Travel Assistants
TravelMaster™
Finance/Department
10001

FIGURE 11



11000

FIGURE 12

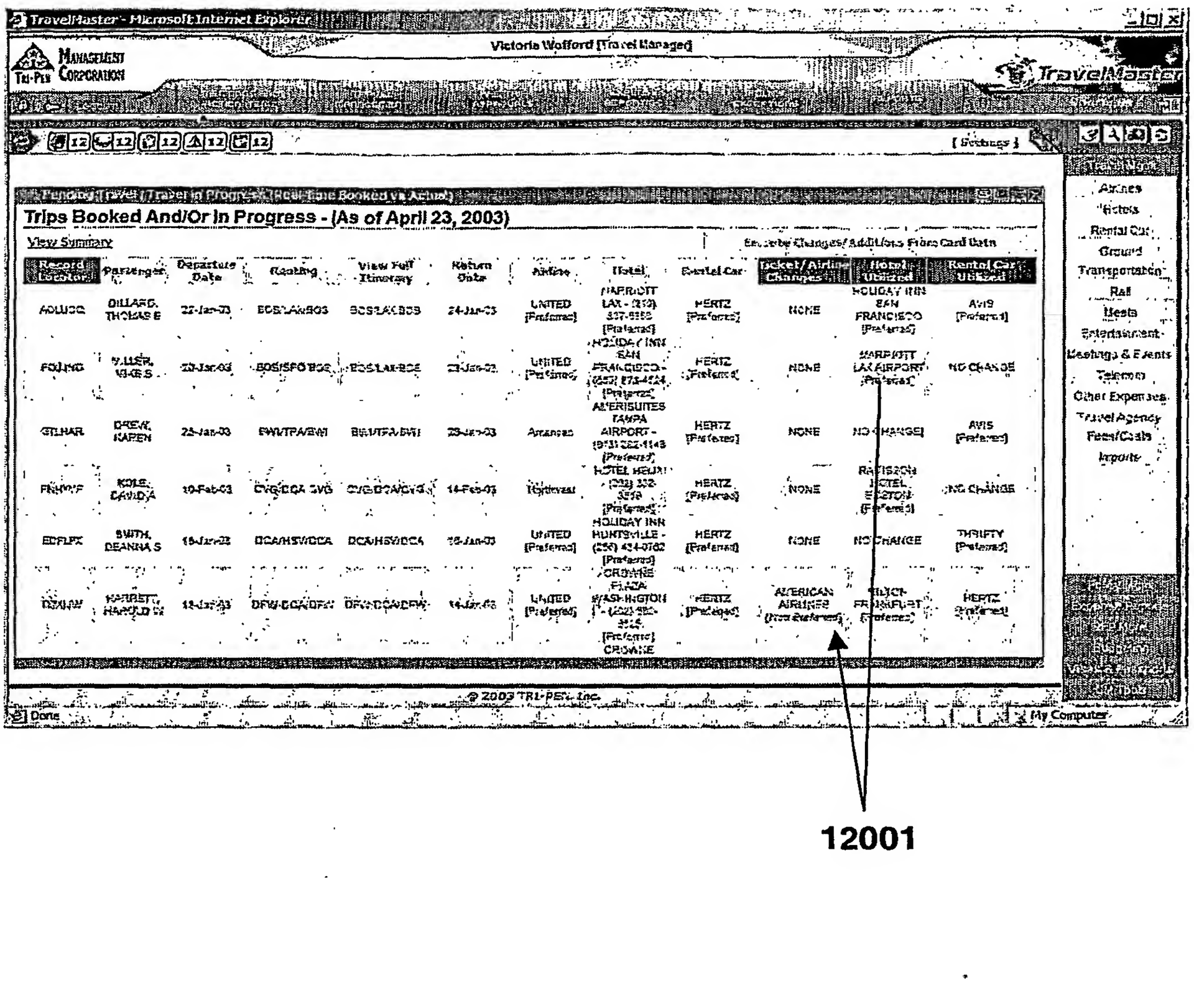

TravelMaster - Microsoft Internet Explorer
Victoria Wofford [Travel Manager]
TRI-PRO MANAGEMENT CORPORATION
TravelMaster
Trips Booked And/Or In Progress - (As of April 23, 2003)
View Summary
Record Locator
Passenger
Departure Date
Routing
View Full Itinerary
Return Date
Airline
Hotel
Rental Car
Ticket / Airline Changes
Hotel Utilized
Rental Car Utilized
Airlines
Hotels
Rental Car
Ground Transportation
Rail
Meals
Entertainment
Meetings & Events
Telecom
Other Expenses
Travel Agency Fees/Costs
Reports
© 2003 TRI-PRO, Inc.
Done
My Computer
12001

FIGURE 13

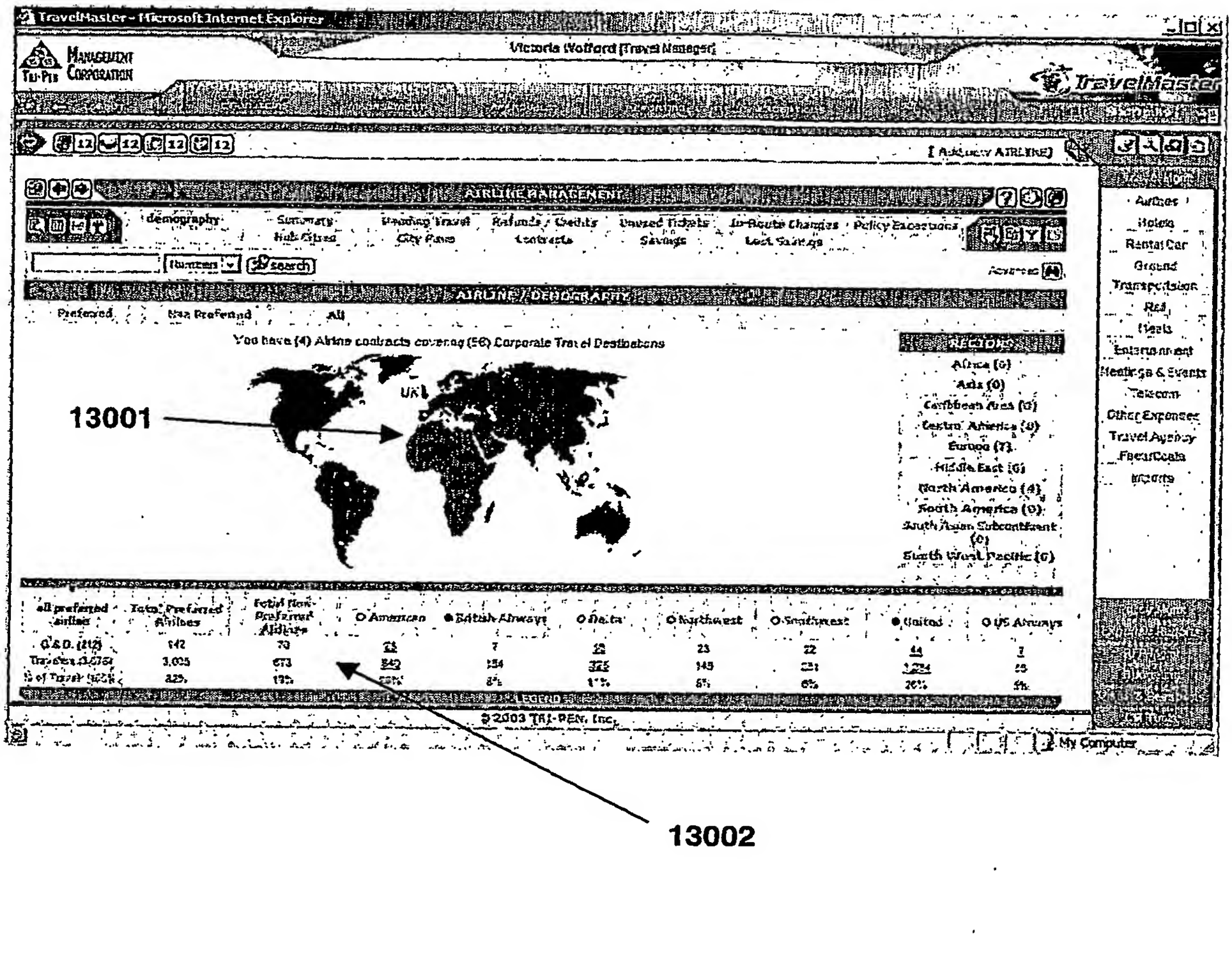

TravelMaster - Microsoft Internet Explorer
TRAVELMASTER
AIRLINE MANAGEMENT
demography
Summary
Pending Travel
Refunds / Credits
Unused Tickets
In-Route Changes
Policy Exceptions
Search
AIRLINE/DEMOGRAPHY
Preferred
Non Preferred
All
You have (4) Airline contracts covering (56) Corporate Travel Destinations
13001
UK
RECORDS
Africa (0)
Asia (0)
Caribbean Area (0)
Central America (0)
Europe (7)
Middle East (0)
North America (4)
South America (0)
South Asian Subcontinent (0)
South West Pacific (0)
all preferred airlines
Total Preferred Airlines
Total Non-Preferred Airlines
American
British Airways
Delta
Northwest
Southwest
United
US Airways
LEGEND
© 2003 TRI-PEN, Inc.
My Computer
13002

FIGURE 14

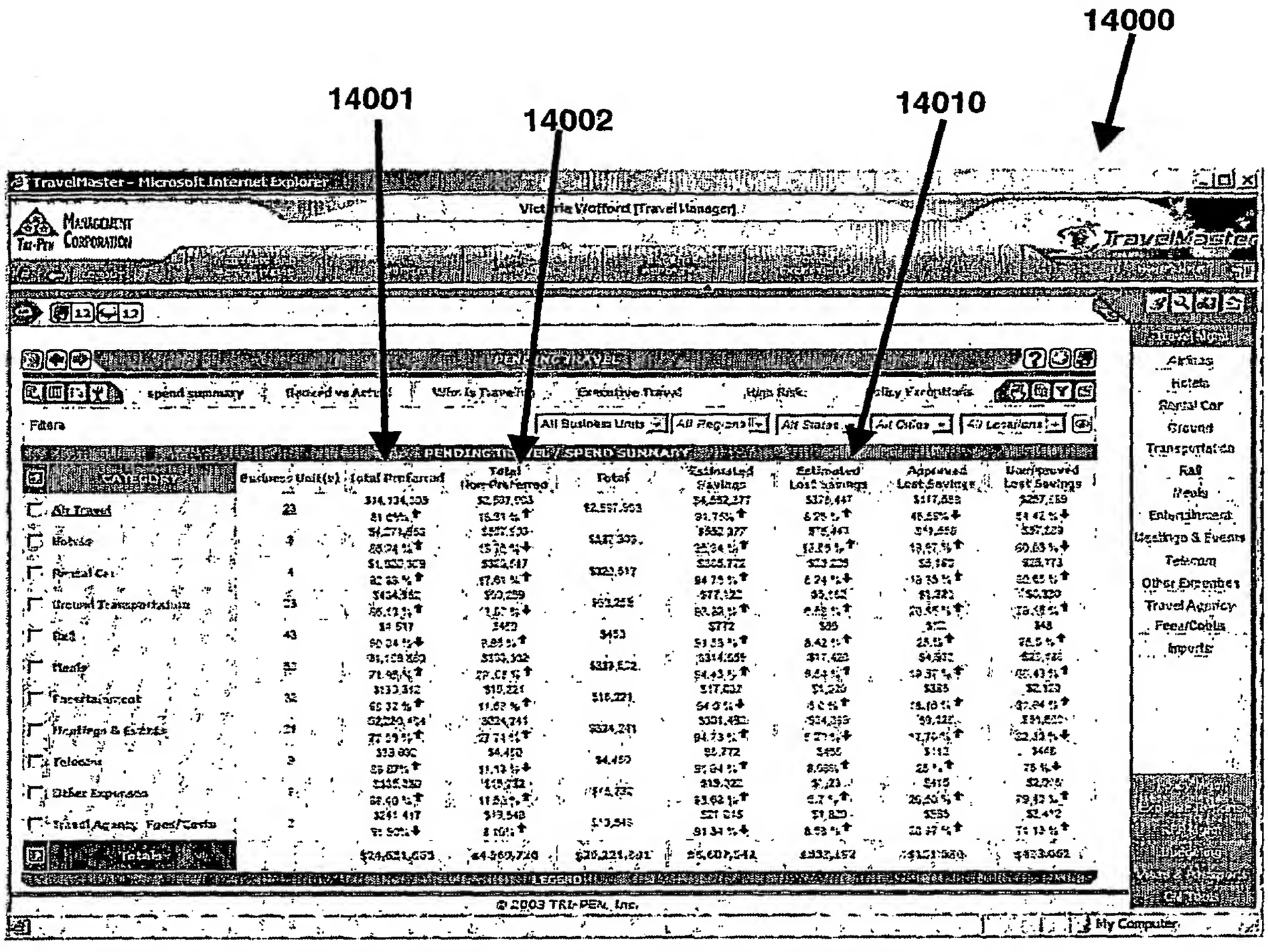

14000
14001
14002
14010
TravelMaster - Microsoft Internet Explorer
Victoria Watford [Travel Manager]
TRI-PEN MANAGEMENT CORPORATION
TravelMaster
PENDING TRAVEL
spend summary
Filters
All Business Units
All Regions
All States
All Cities
All Locations
PENDING TRAVEL / SPEND SUMMARY
CATEGORY
Business Unit(s)
Total Preferred
Total Non-Preferred
Total
Estimated Savings
Estimated Lost Savings
Approved Lost Savings
Unapproved Lost Savings
Air Travel
Hotels
Rental Car
Ground Transportation
Rail
Meals
Entertainment
Meetings & Events
Telecom
Other Expenses
Travel Agency Fees/Costs
Totals
Travel Alerts
Airlines
Hotels
Rental Car
Ground Transportation
Rail
Meals
Entertainment
Meetings & Events
Telecom
Other Expenses
Travel Agency Fees/Costs
Imports
LEGEND
© 2003 TRI-PEN, Inc.
My Computer

FIGURE 15

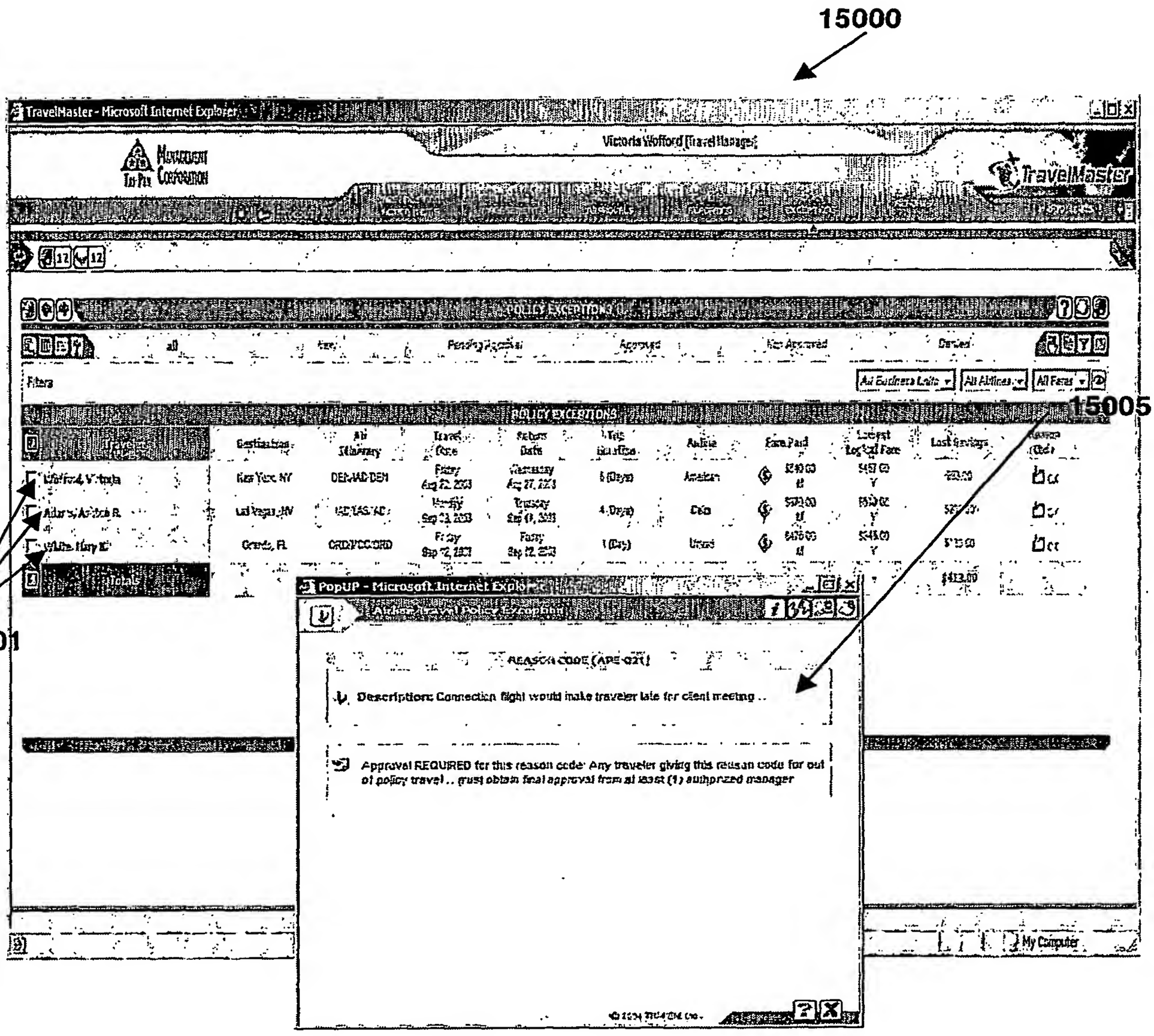
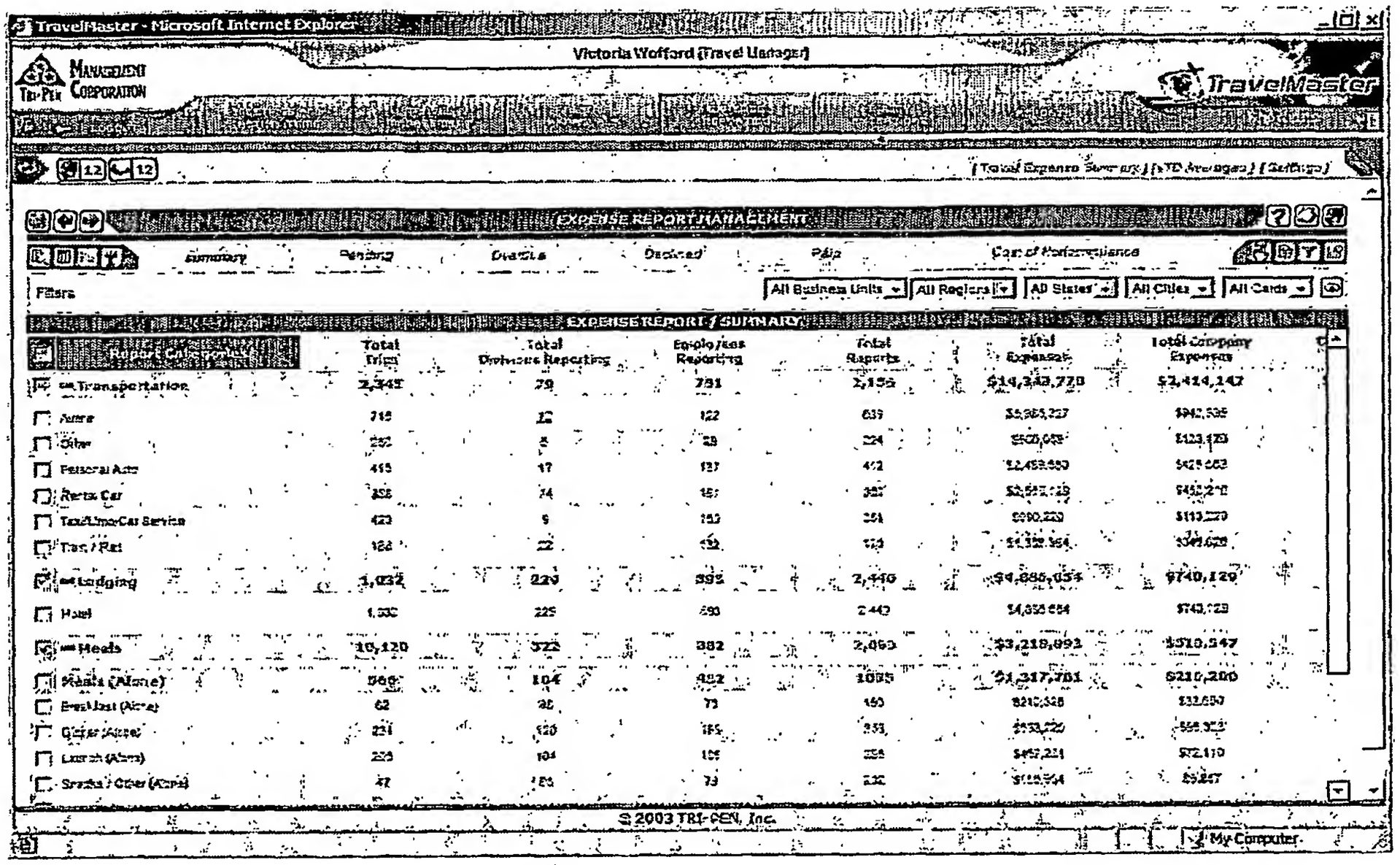
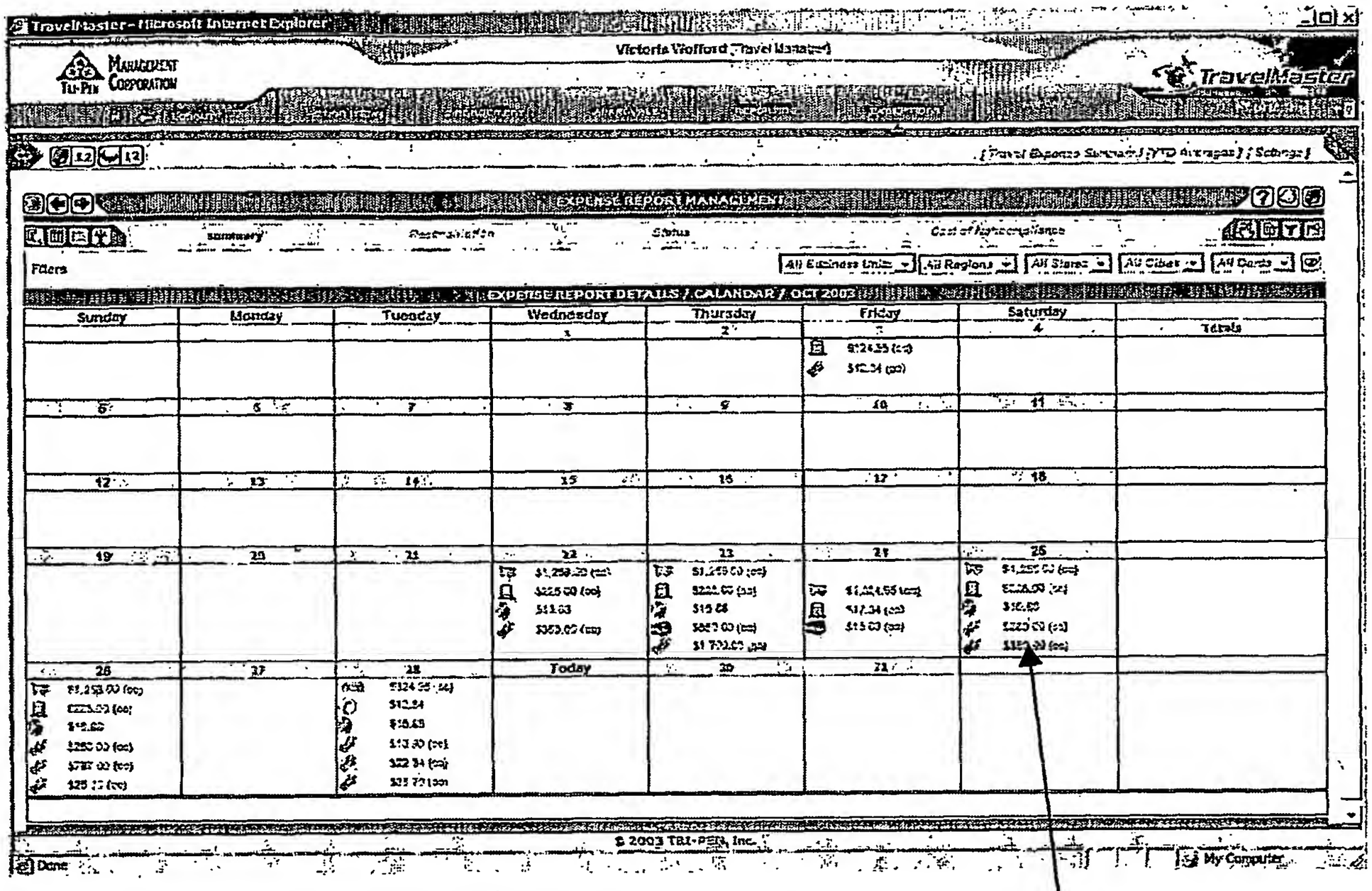

15000
TravelMaster - Microsoft Internet Explorer
TravelMaster
POLICY EXCEPTIONS
15005
15001
PopUP - Microsoft Internet Explo
REASON CODE (APE-02)
Description: Connection flight would make traveler late for client meeting ..
Approval REQUIRED for this reason code: Any traveler giving this reason code for out of policy travel .. must obtain final approval from at least (1) authorized manager
My Computer

FIGURE 16



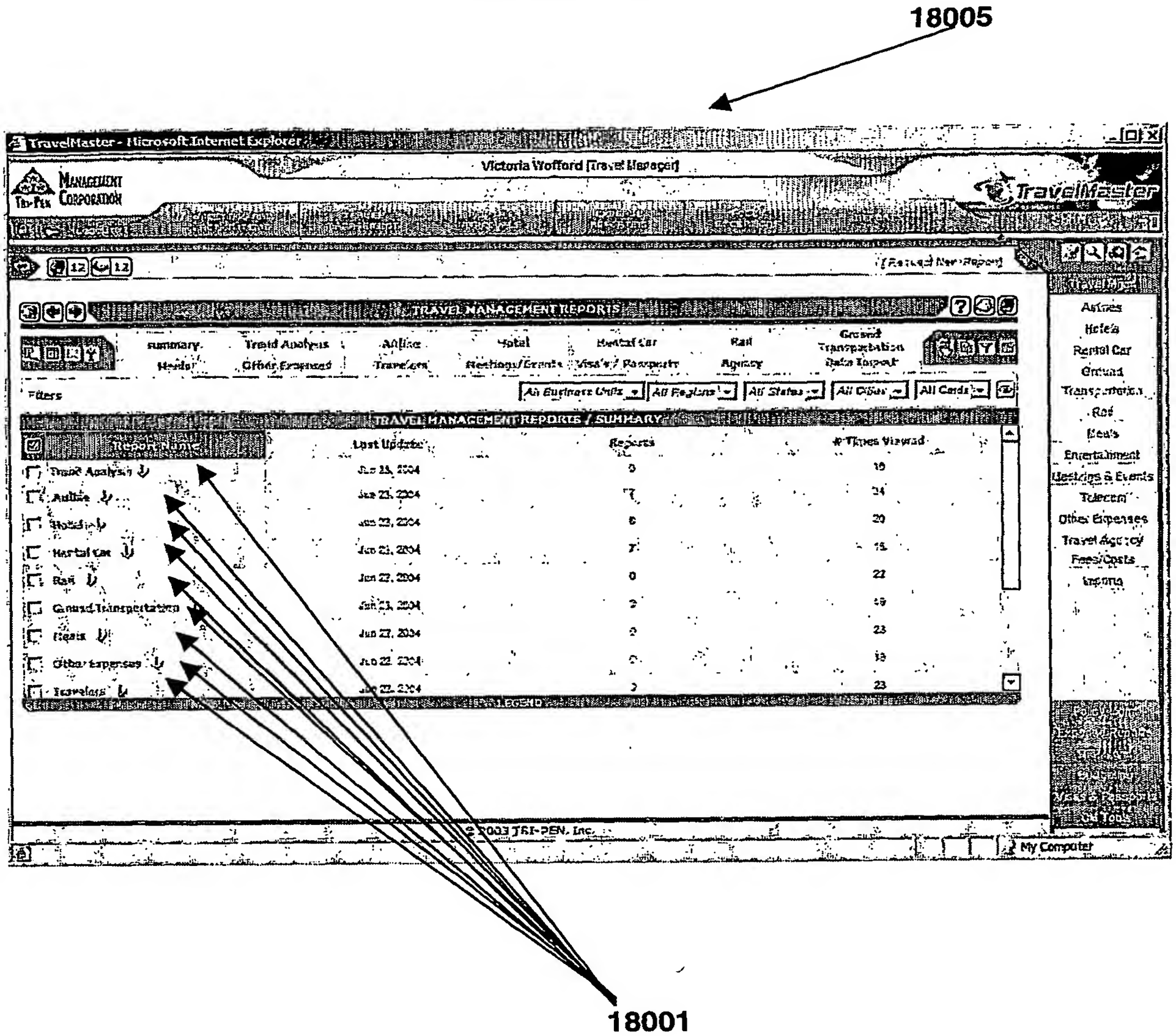
16001

FIGURE 17



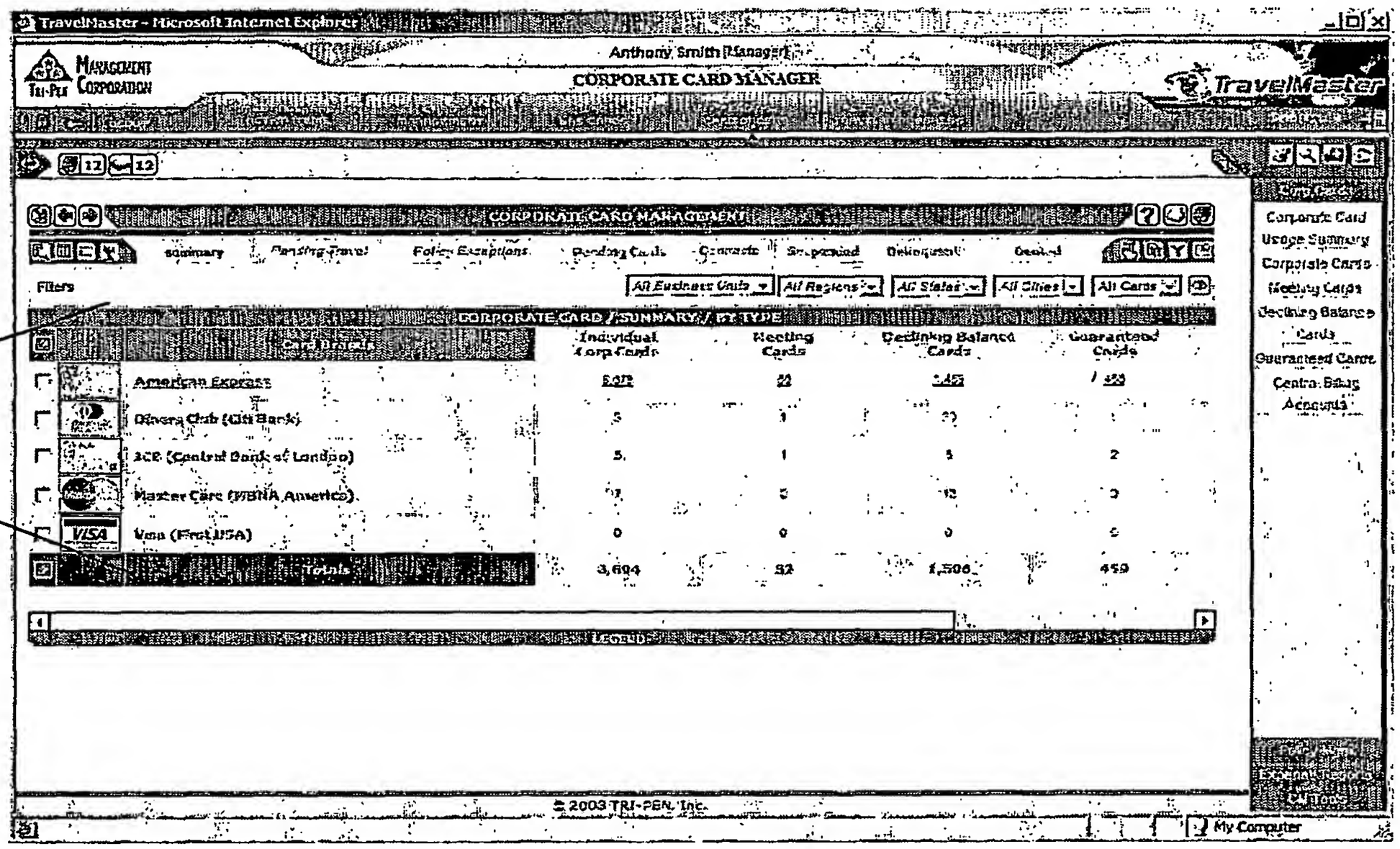
17001

FIGURE 18


18005
TravelMaster - Microsoft Internet Explorer
Victoria Wofford [Travel Manager]
TravelMaster
TRAVEL MANAGEMENT REPORTS
Summary
Trend Analysis
Airline
Total
Rental Car
Rail
Ground Transportation
Hotel
Office Expenses
Travelers
Meetings/Events
Visa's / Passports
Agency
Data Export
Filters
All Business Units
All Regions
All Status
All Offices
All Cards
TRAVEL MANAGEMENT REPORTS / SUMMARY
Report Name
Last Update
Reports
Times Viewed
Trend Analysis
Jun 15, 2004
10
Airline
Jun 23, 2004
24
Hotel
Jun 23, 2004
20
Rental Car
Jun 23, 2004
15
Rail
Jun 22, 2004
22
Ground Transportation
Jun 23, 2004
19
Meals
Jun 27, 2004
23
Other Expenses
Jun 22, 2004
18
Travelers
Jun 22, 2004
23
Airfare
Hotels
Rental Car
Ground Transportation
Rail
Meals
Entertainment
Meetings & Events
Telecom
Other Expenses
Travel Agency
Fees/Costs
Income
© 2003 TRI-PEN, Inc.
My Computer
18001

19000

FIGURE 19



19001

FIGURE 20

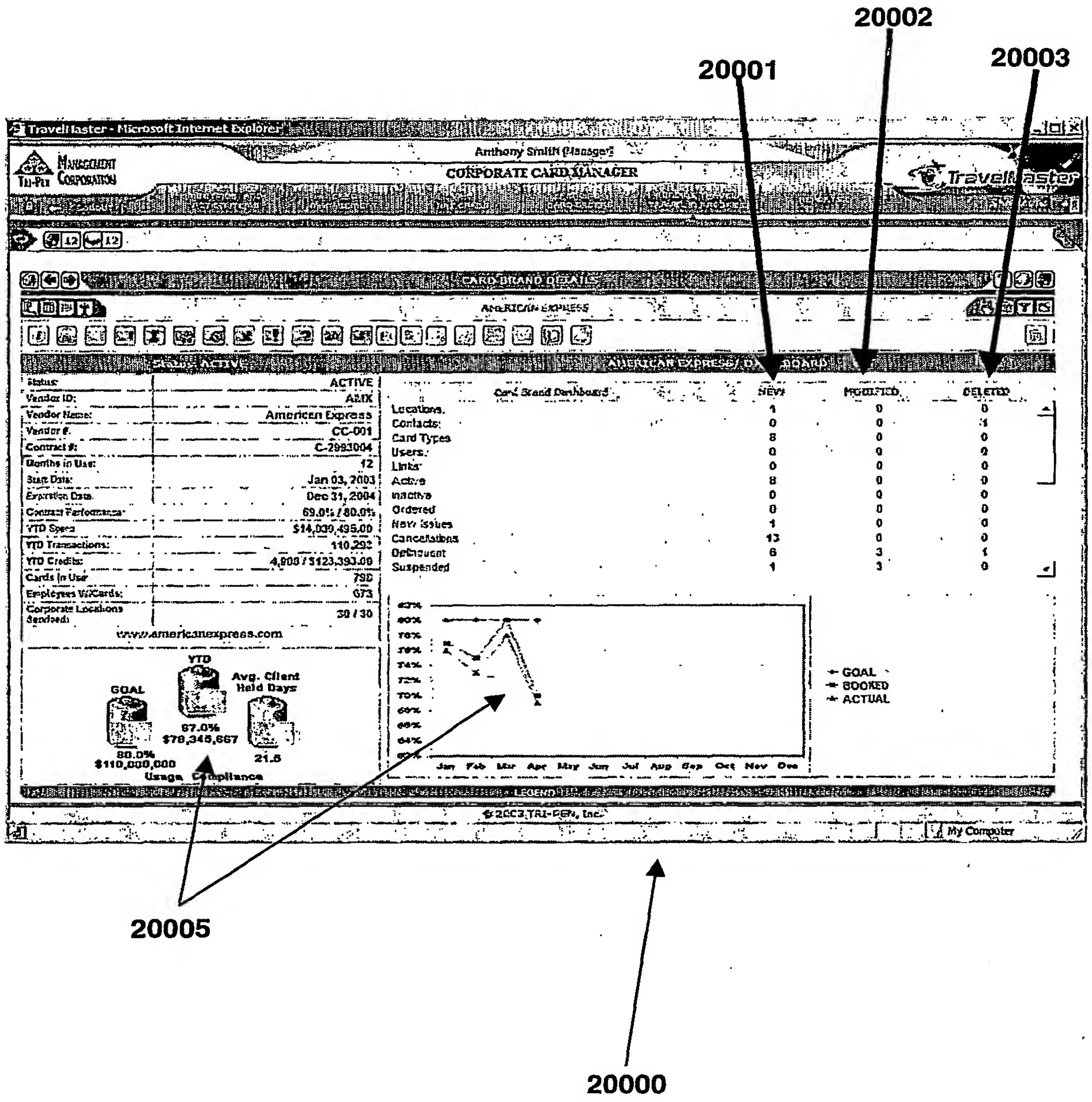

20001
20002
20003
Anthony Smith (Manager)
CORPORATE CARD MANAGER
AMERICAN EXPRESS
Status: ACTIVE
Vendor ID: AEIX
Vendor Name: American Express
Vendor #: CC-001
Contract #: C-2993004
Months in Use: 12
Start Date: Jan 03, 2003
Expiration Date: Dec 31, 2004
Contract Performance: 69.0% / 80.0%
YTD Spend: $14,039,495.00
YTD Transactions: 110,292
YTD Credits: 4,900 / $123,393.00
Cards in Use: 790
Employees w/Cards: 973
Corporate Locations Serviced: 30 / 30
www.americanexpress.com
YTD
Avg. Client Held Days
GOAL
87.0%
$78,345,667
80.0%
$110,000,000
21.5
Usage Compliance
Card Brand Dashboard
NEW
MODIFIED
DELETED
Locations: 1 0 0
Contacts: 0 0 1
Card Types 8 0 0
Users: 0 0 0
Links 0 0 0
Active 8 0 0
Inactive 0 0 0
Ordered 0 0 0
New Issues 1 0 0
Cancellations 13 0 0
Delinquent 6 3 1
Suspended 1 3 0
GOAL
BOOKED
ACTUAL
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
My Computer
20005
20000

FIGURE 21

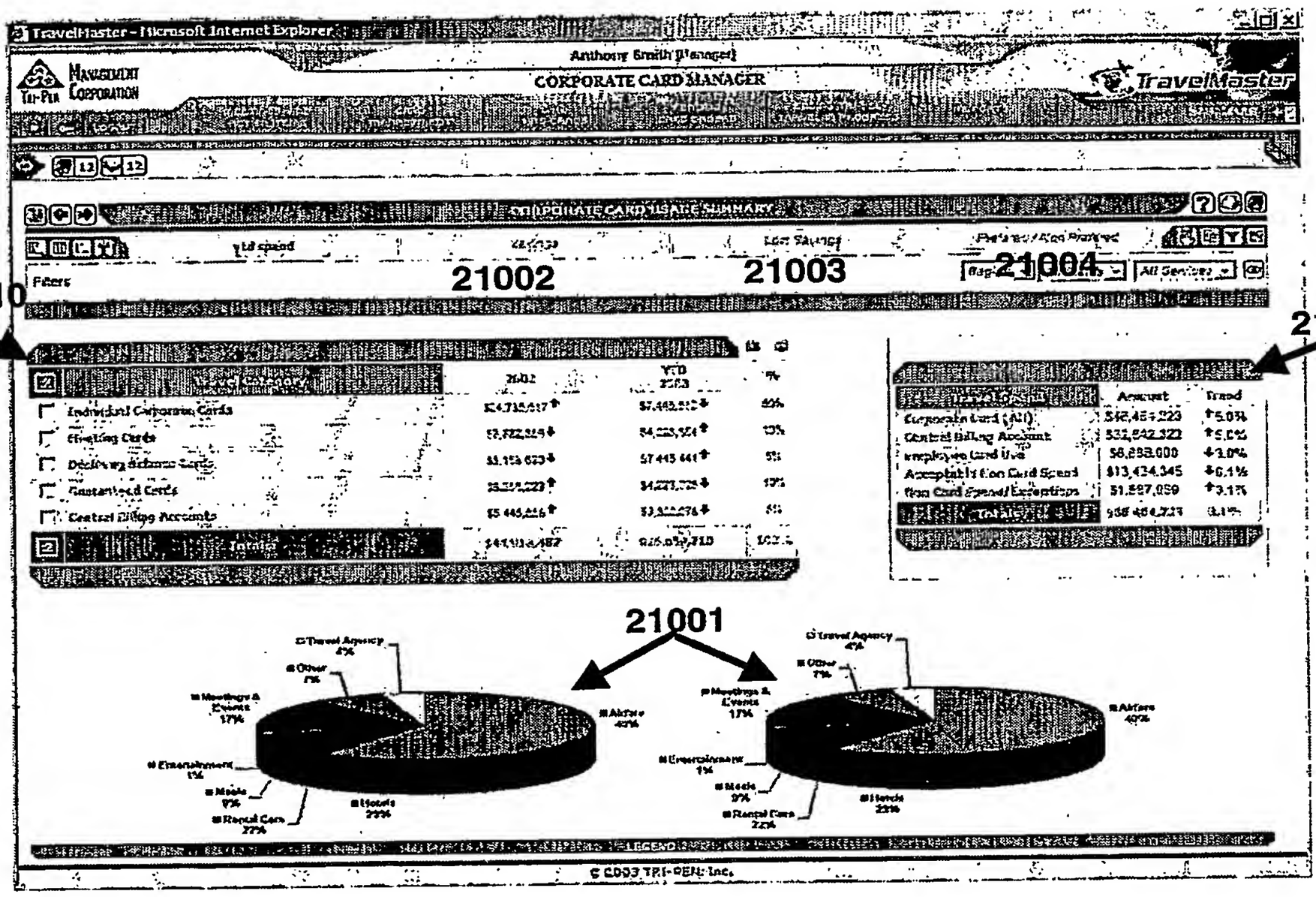

21010
21002
21003
21004
21020
21001
CORPORATE CARD MANAGER
TravelMaster
CORPORATE CARD USAGE SUMMARY
Filters
Travel Category
Individual Corporate Cards
Flying Cards
Declining Balance Cards
Guaranteed Cards
Central Billing Accounts
Totals
Amount
Travel
Corporate Card (All)
Central Billing Account
Employee Card Use
Acceptable Non Card Spend
Non Card Spend Exceptions
Travel Agency 4%
Other 7%
Meetings & Events 17%
Airfare 40%
Entertainment 1%
Meals 9%
Rental Cars 22%
Hotels 22%
© 2003 TRI-PEN, Inc.

FIGURE 22

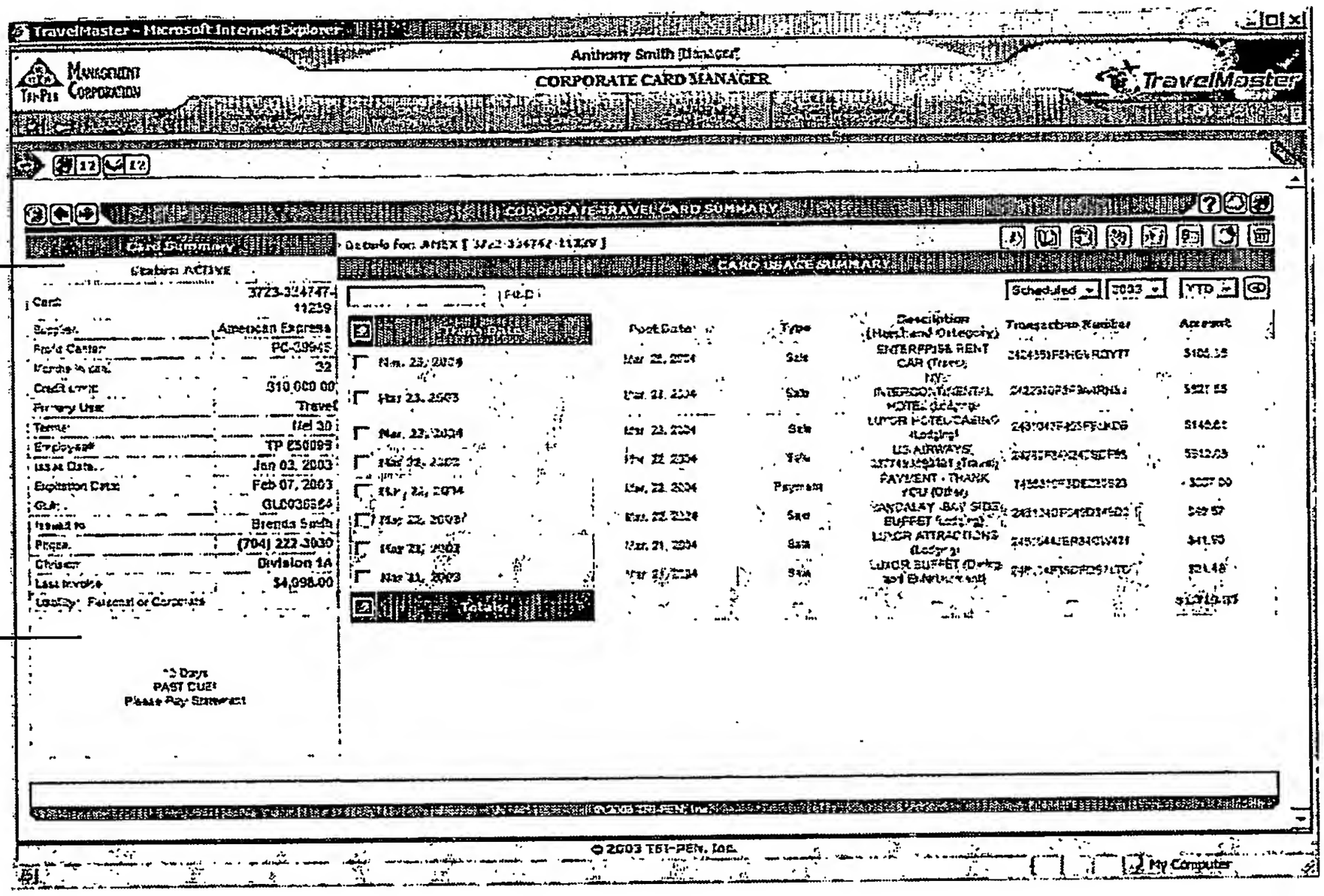

22001
TravelMaster - Microsoft Internet Explorer
Anthony Smith [Manager]
CORPORATE CARD MANAGER
TravelMaster
CORPORATE TRAVEL CARD SUMMARY
Card Summary
CARD USAGE SUMMARY
Status ACTIVE
Card
American Express
Credit Limit
$10,000.00
Primary Use
Travel
Terms
Net 30
Employee#
Jan 03, 2003
Expiration Date
Feb 07, 2003
Brenda Smith
(704) 222-3030
Division 1A
Last Invoice
$4,098.00
Liability: Personal or Corporate
Post Date
Type
Description
Transaction Number
Amount
Totals:
Scheduled
2003
YTD
PAST DUE!
Please Pay Statement
© 2003 TSI-PEN, Inc.
My Computer

FIGURE 23

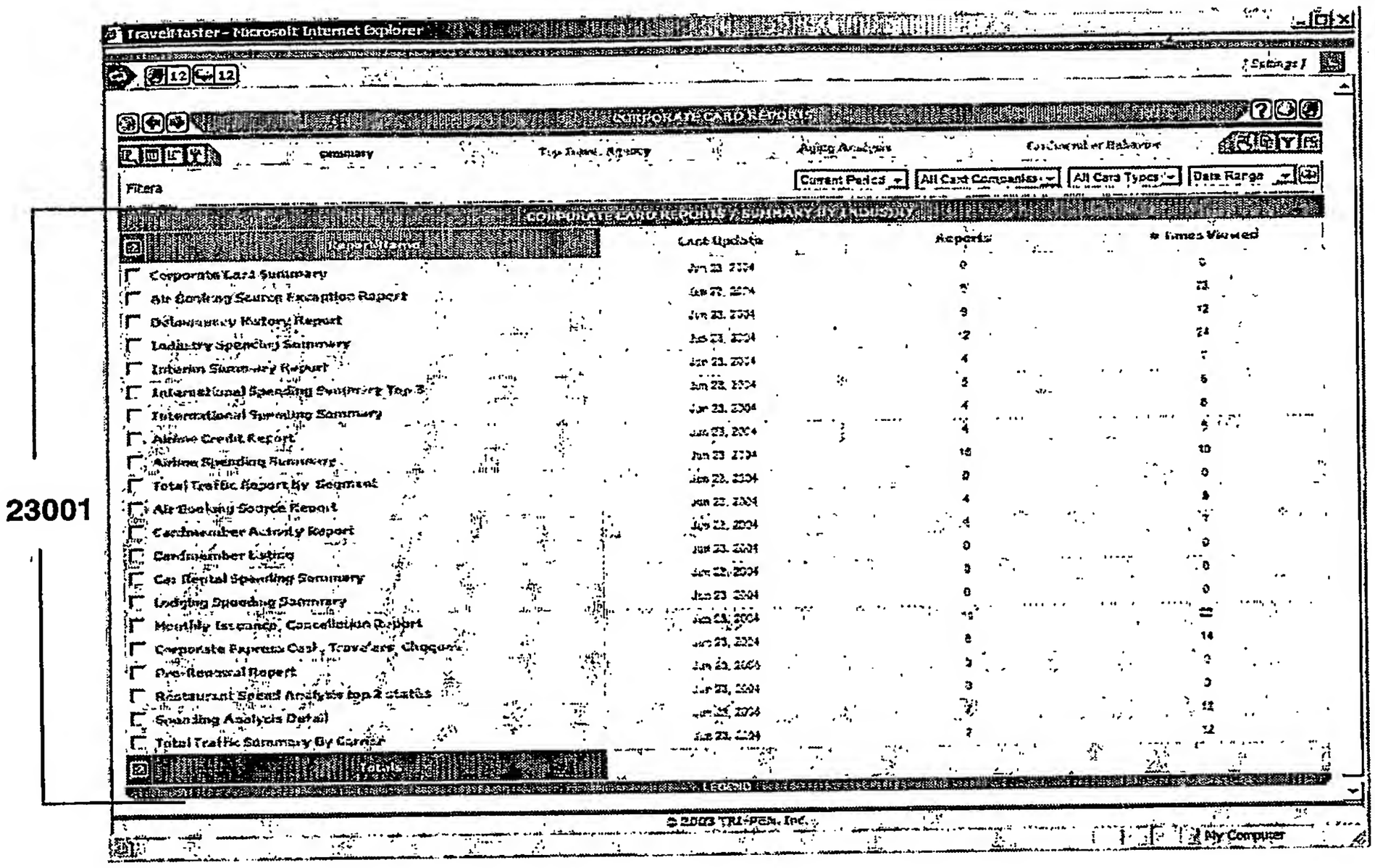
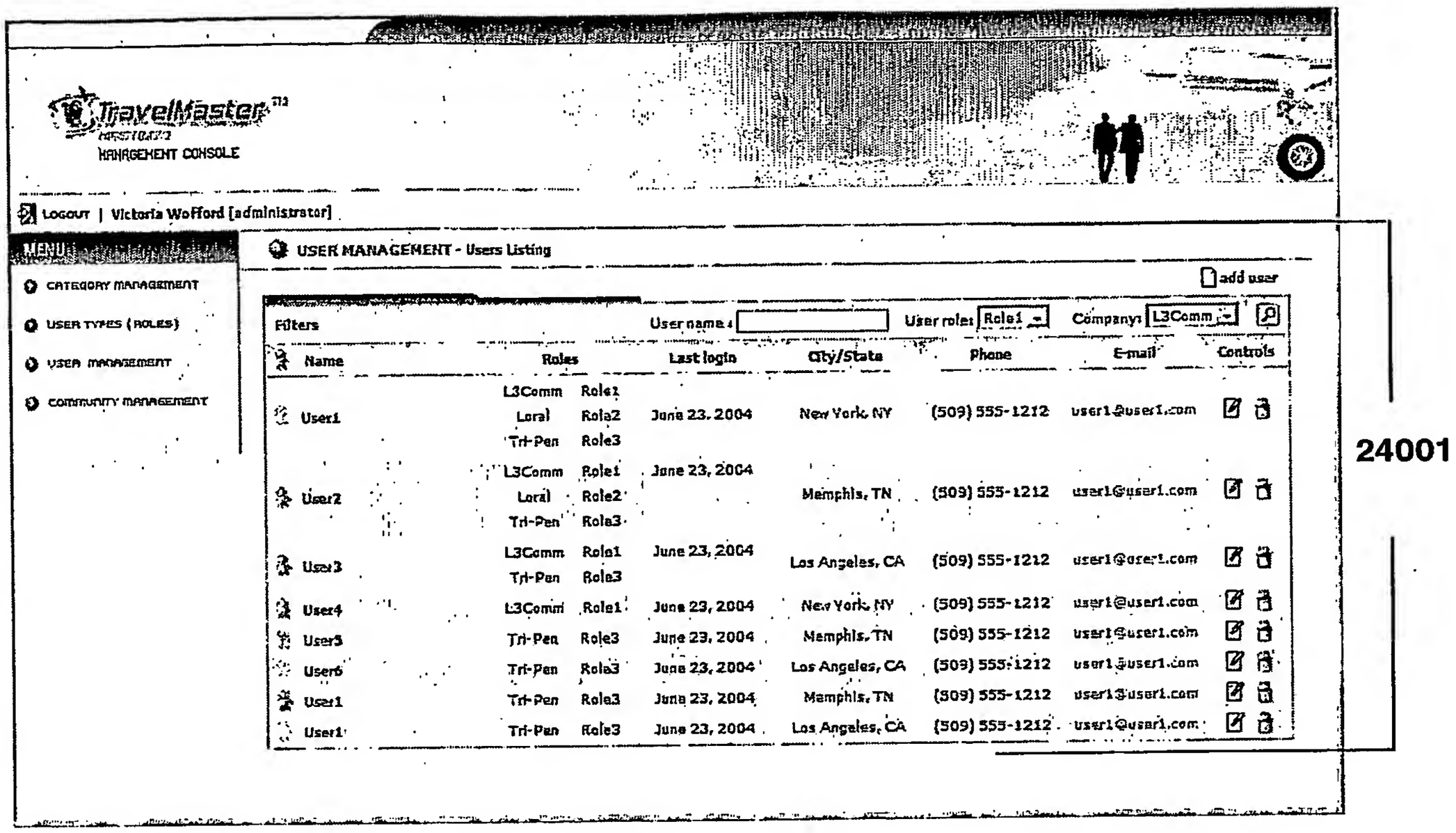
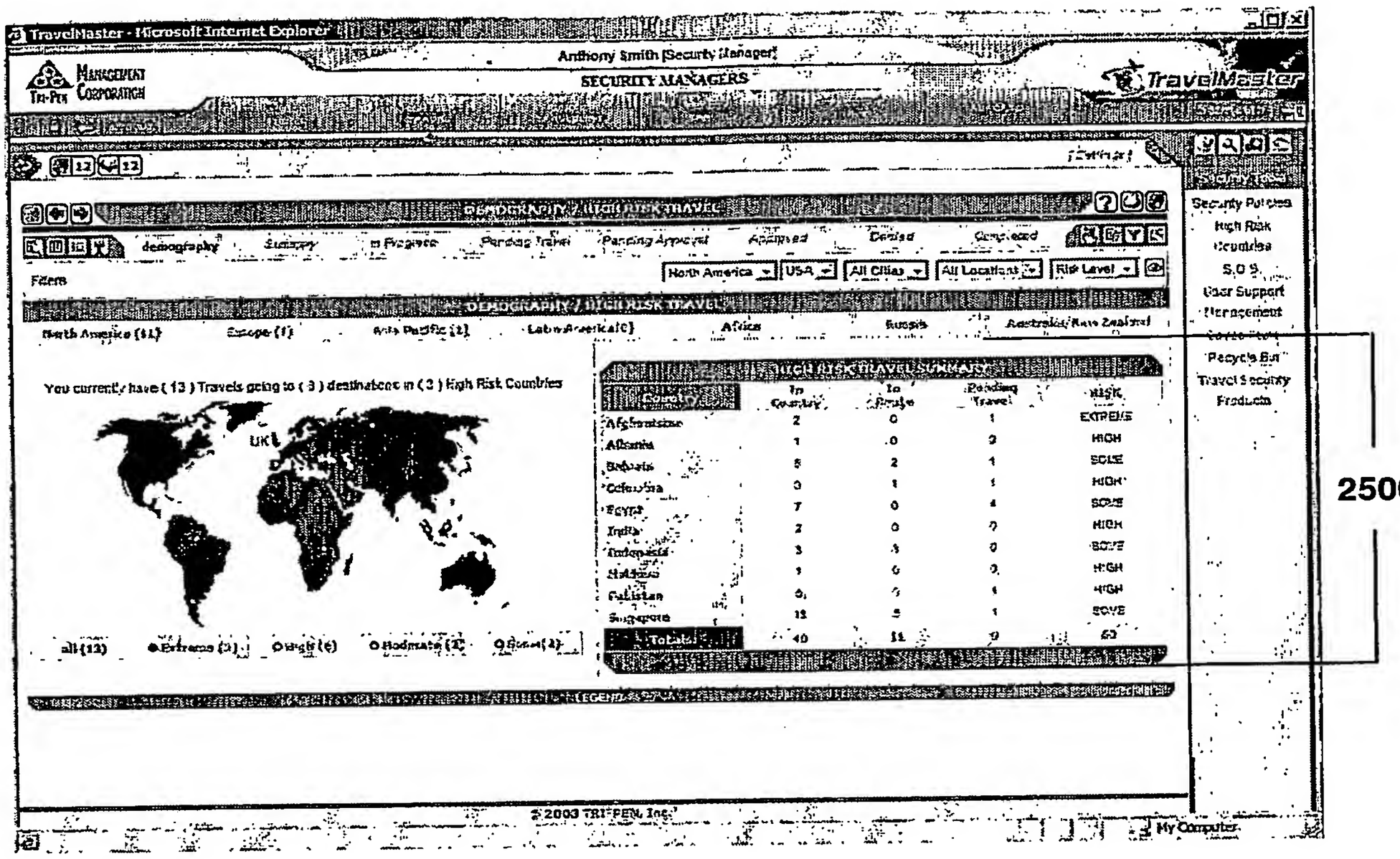

TravelMaster - Microsoft Internet Explorer
CORPORATE CARD REPORTS
Summary
Trip Spend Analysis
Aging Analysis
Card Member Balances
Current Period
All Card Companies
All Card Types
Date Range
Filters
CORPORATE CARD REPORTS / SUMMARY BY INDUSTRY
Report Name
Last Update
Reports
Times Viewed
Corporate Card Summary
Air Booking Source Exception Report
Delinquency History Report
Lodging Spending Summary
Interim Summary Report
International Spending Summary Top 5
International Spending Summary
Airline Credit Report
Airline Spending Summary
Total Traffic Report By Segment
Air Booking Source Report
Cardmember Activity Report
Cardmember Listing
Car Rental Spending Summary
Lodging Spending Summary
Monthly Issuance, Cancellation Report
Corporate Express Cash / Travelers Cheques
Pre-Renewal Report
Restaurant Spend Analysis top 2 states
Spending Analysis Detail
Total Traffic Summary By Carrier
Totals
LEGEND
© 2003 TRI-PEN, Inc.
My Computer
23001

FIGURE 24



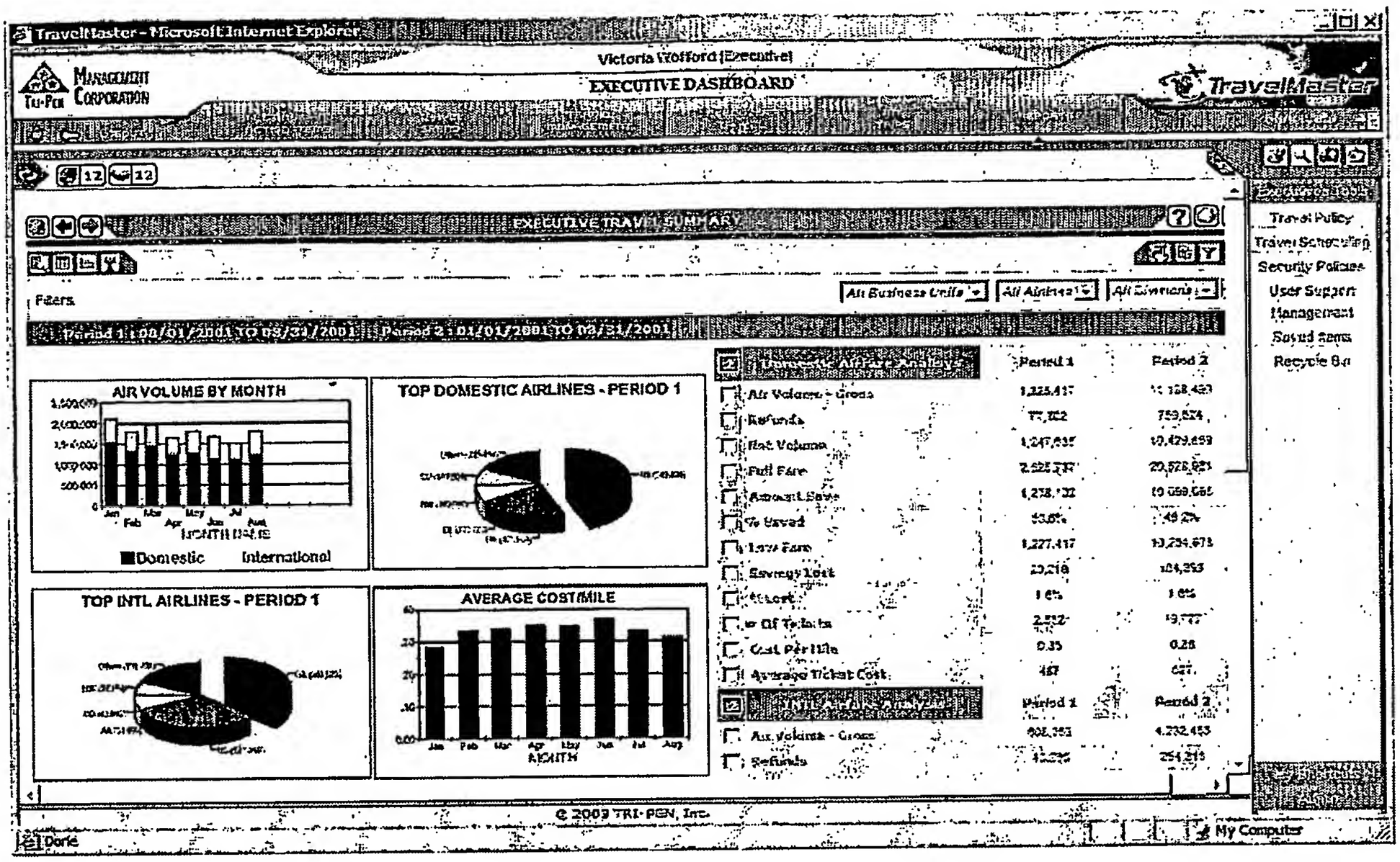
24001

FIGURE 25



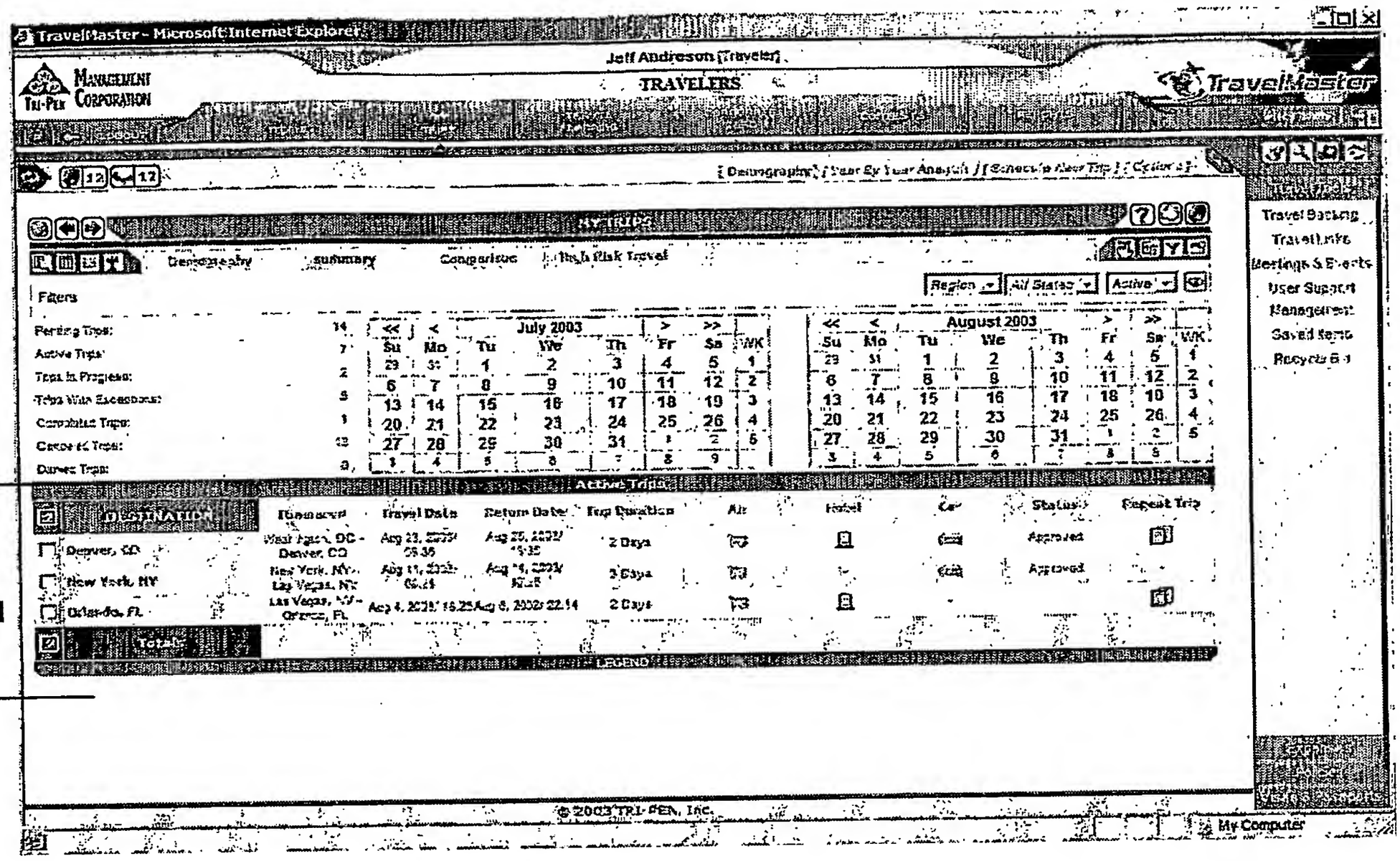
25001

FIGURE 26



26000

FIGURE 27



27001

FIGURE 28

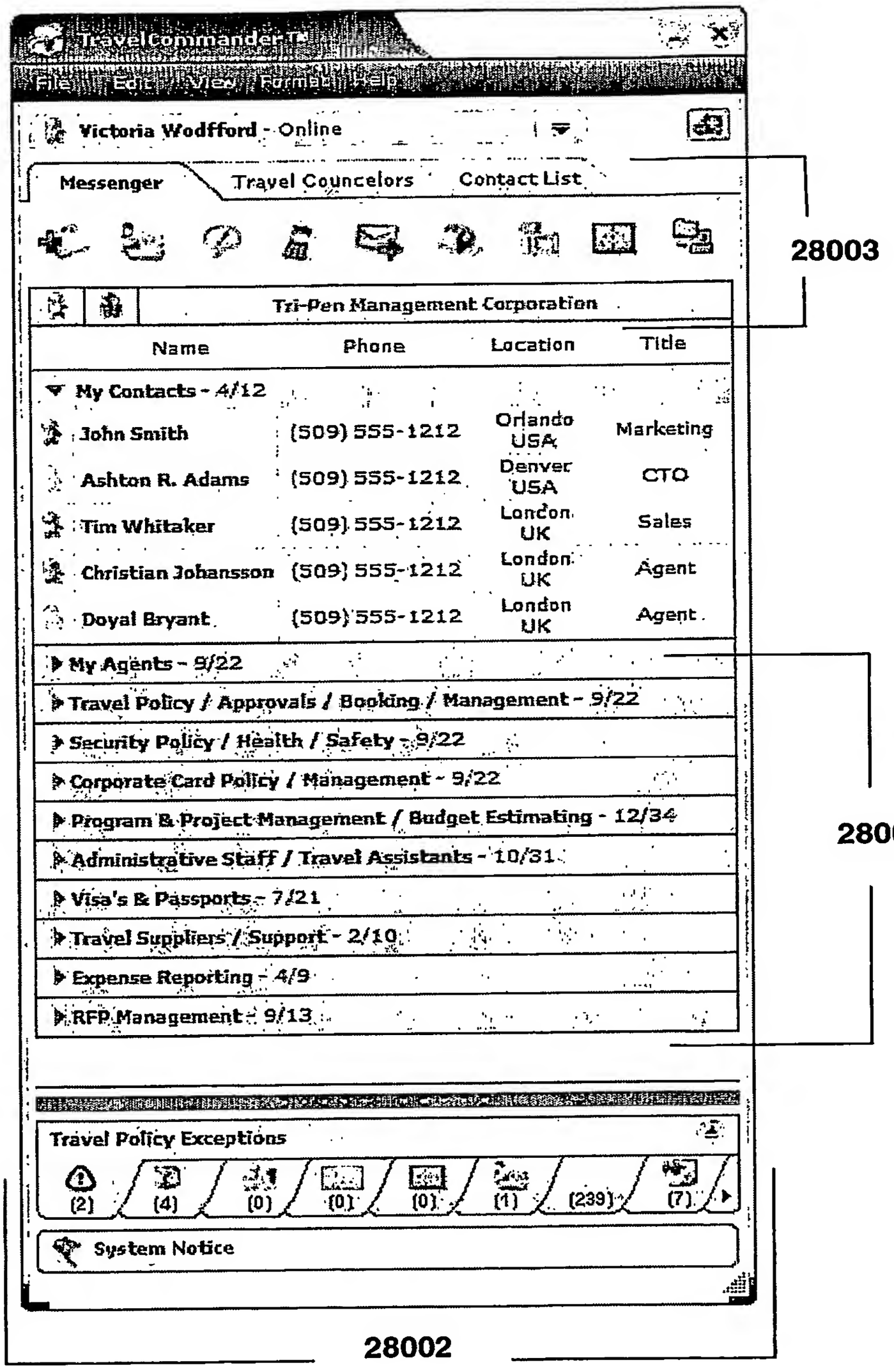

TravelCommander™
File Edit View Format Help
Victoria Wodfford - Online
Messenger
Travel Councelors
Contact List
Tri-Pen Management Corporation
Name
Phone
Location
Title
My Contacts - 4/12
John Smith (509) 555-1212 Orlando USA Marketing
Ashton R. Adams (509) 555-1212 Denver USA CTO
Tim Whitaker (509) 555-1212 London UK Sales
Christian Johansson (509) 555-1212 London UK Agent
Doyal Bryant (509) 555-1212 London UK Agent
My Agents - 9/22
Travel Policy / Approvals / Booking / Management - 9/22
Security Policy / Health / Safety - 9/22
Corporate Card Policy / Management - 9/22
Program & Project Management / Budget Estimating - 12/34
Administrative Staff / Travel Assistants - 10/31
Visa's & Passports - 7/21
Travel Suppliers / Support - 2/10
Expense Reporting - 4/9
RFP Management - 9/13
Travel Policy Exceptions
(2) (4) (0) (0) (0) (1) (239) (7)
System Notice
28003
28001
28002

Figure 29

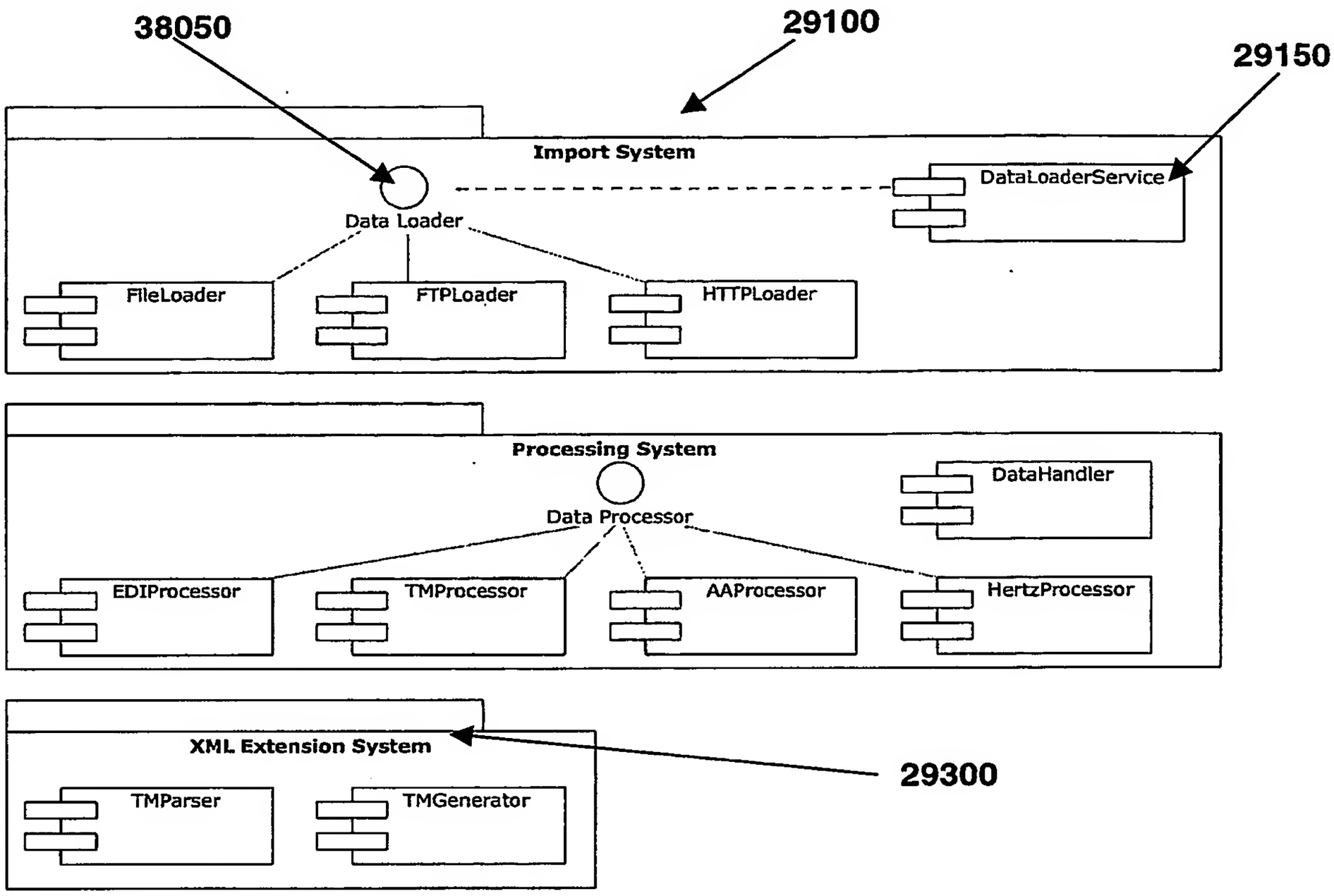

38050
29100
29150
Import System
Data Loader
DataLoaderService
FileLoader
FTPLoader
HTTPLoader
Processing System
Data Processor
DataHandler
EDIProcessor
TMProcessor
AAProcessor
HertzProcessor
XML Extension System
TMParser
TMGenerator
29300

Figure 30

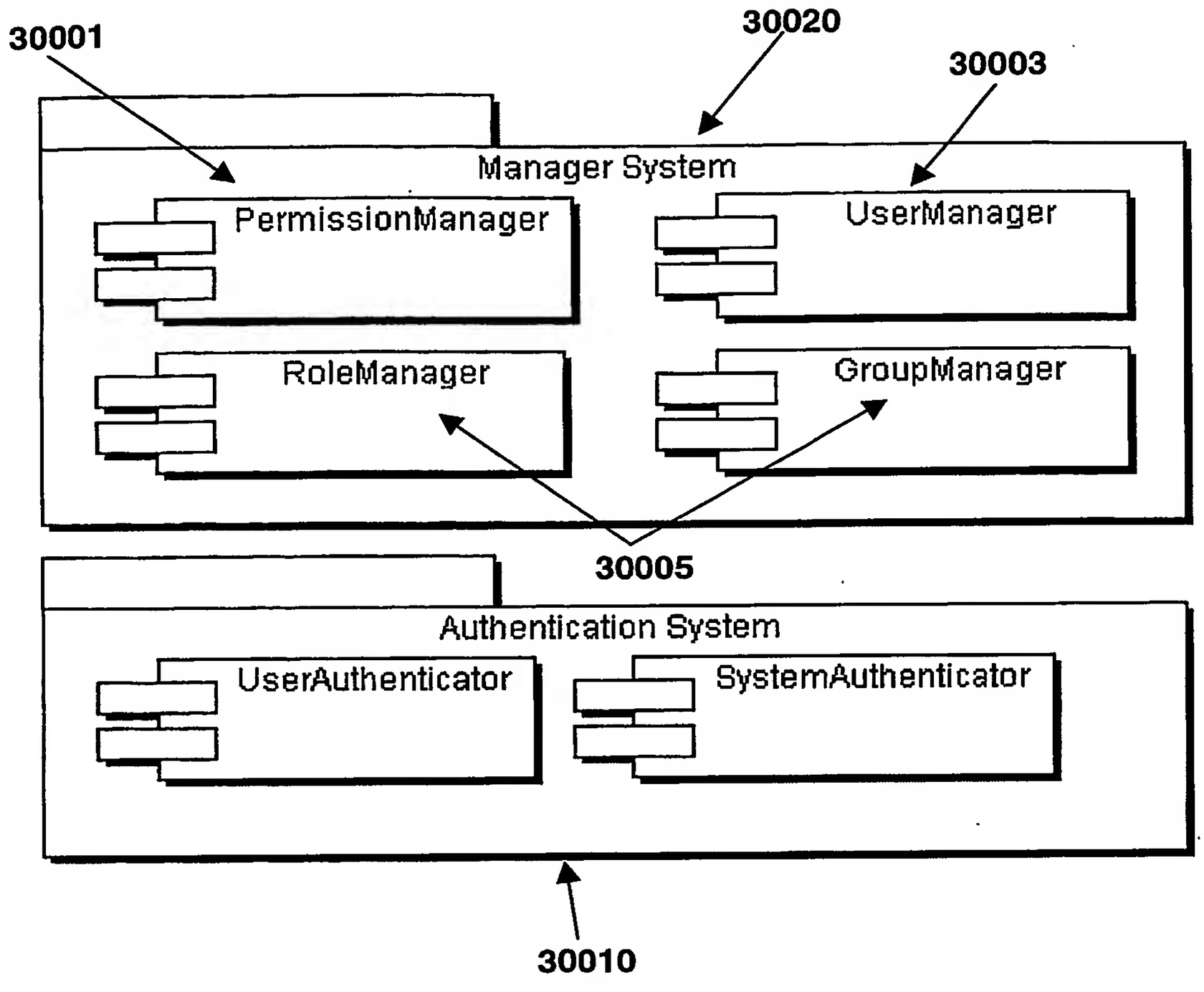

30001
30020
30003
Manager System
PermissionManager
UserManager
RoleManager
GroupManager
30005
Authentication System
UserAuthenticator
SystemAuthenticator
30010

Figure 31

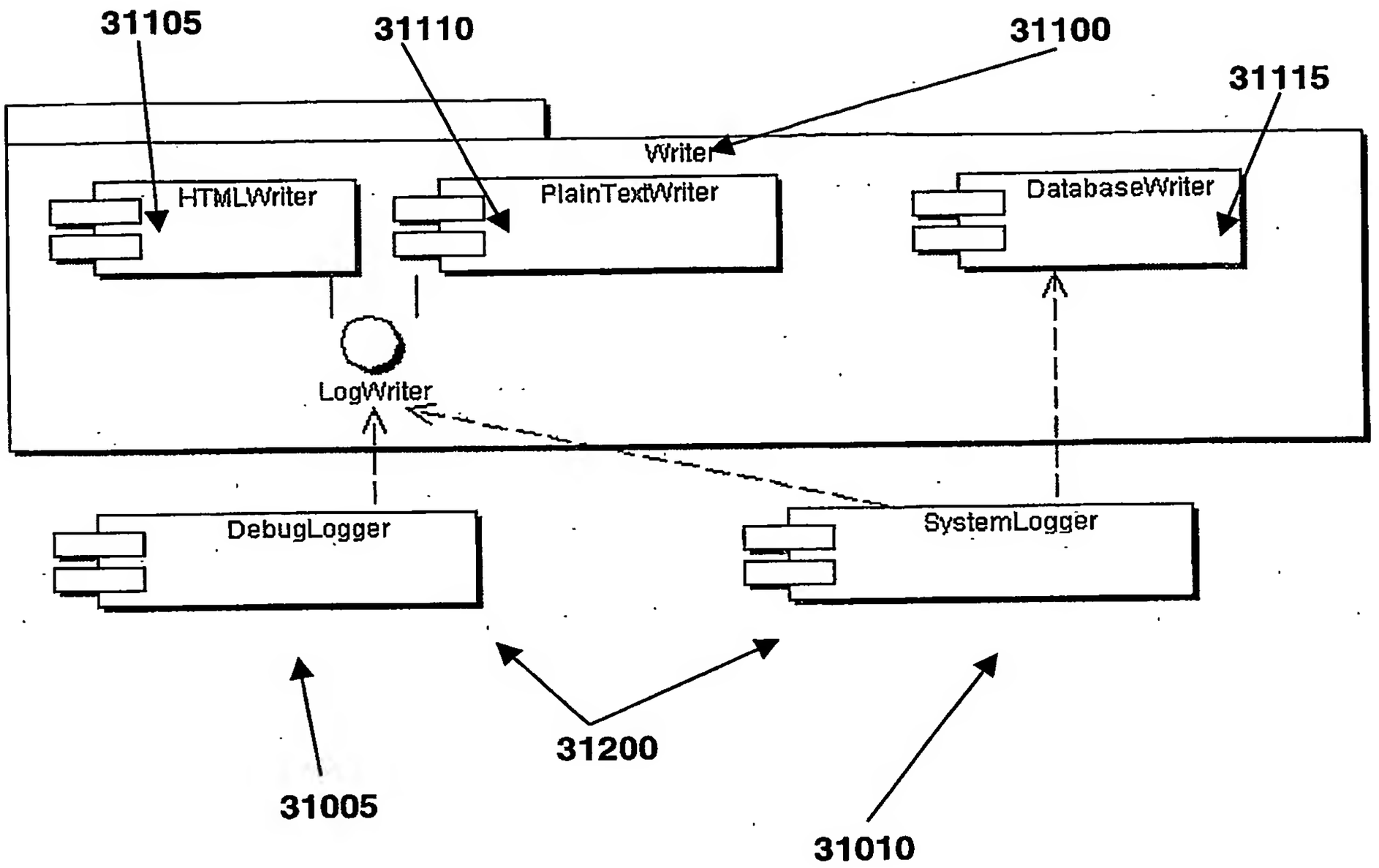

31105
31110
31100
31115
Writer
HTMLWriter
PlainTextWriter
DatabaseWriter
LogWriter
DebugLogger
SystemLogger
31200
31005
31010

Figure 32

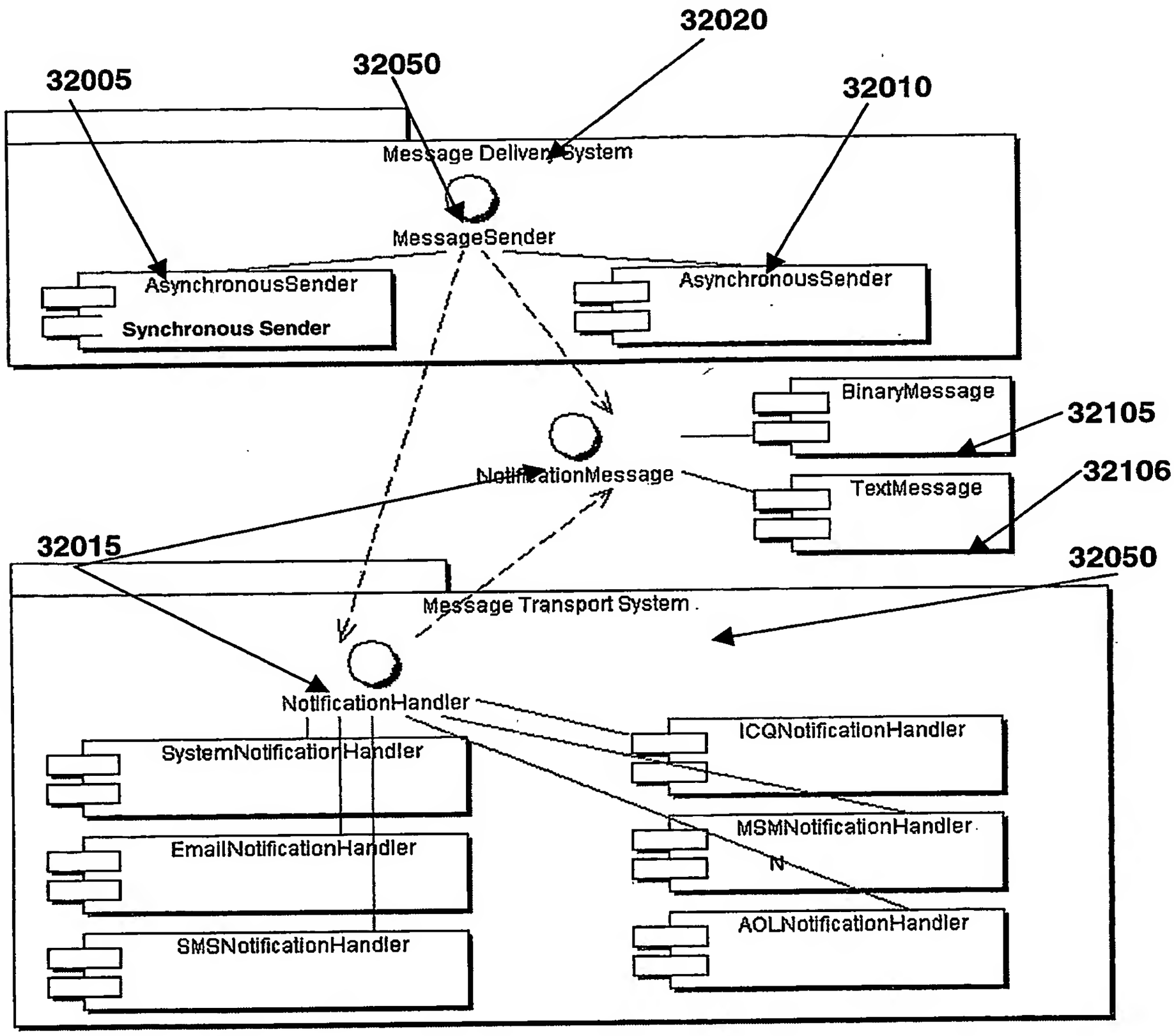

32020
32050
32005
32010
Message Delivery System
MessageSender
AsynchronousSender
Synchronous Sender
AsynchronousSender
BinaryMessage
32105
NotificationMessage
TextMessage
32106
32015
32050
Message Transport System
NotificationHandler
SystemNotificationHandler
EmailNotificationHandler
SMSNotificationHandler
ICQNotificationHandler
MSMNotificationHandler
N
AOLNotificationHandler

Figure 33

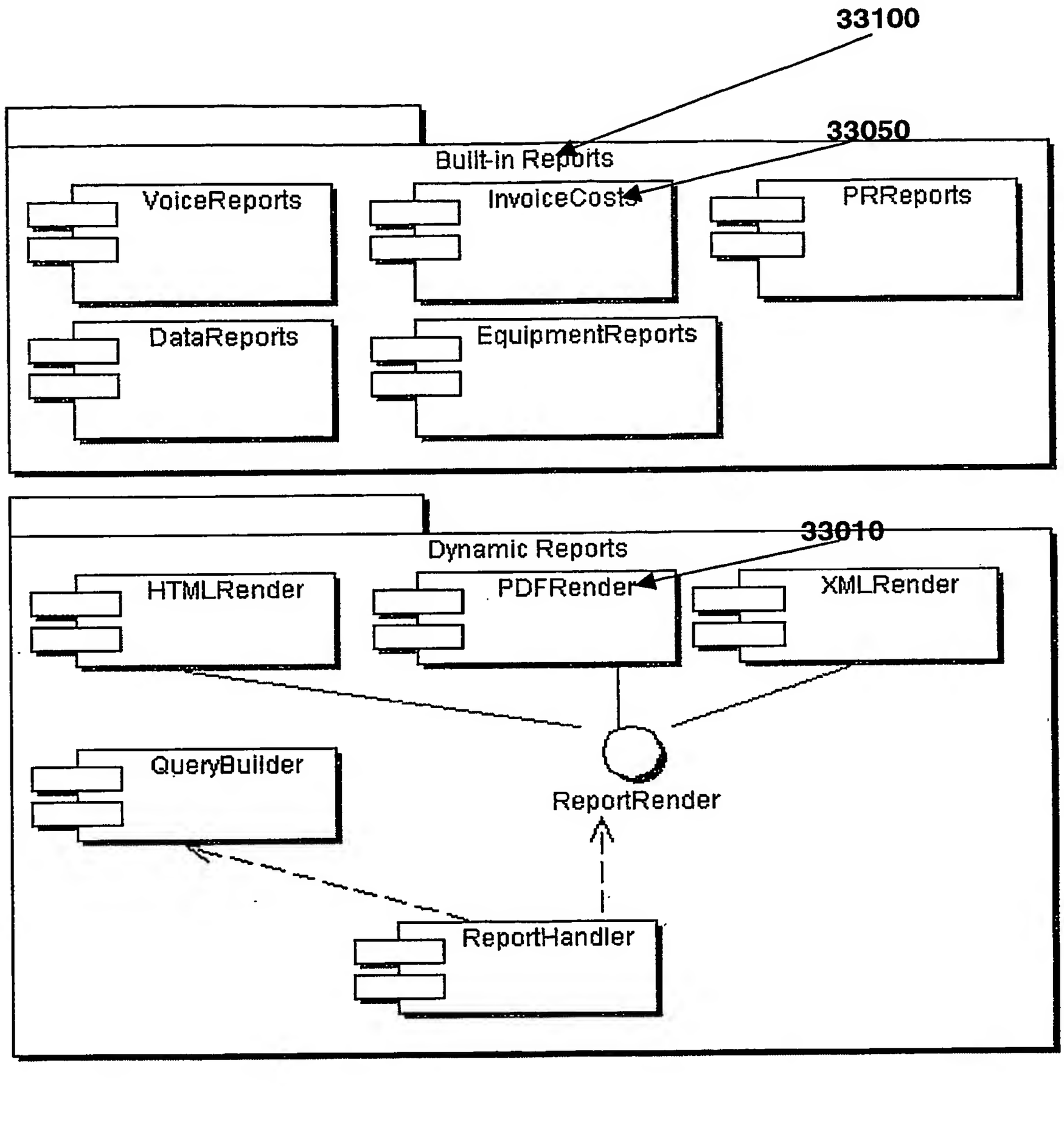
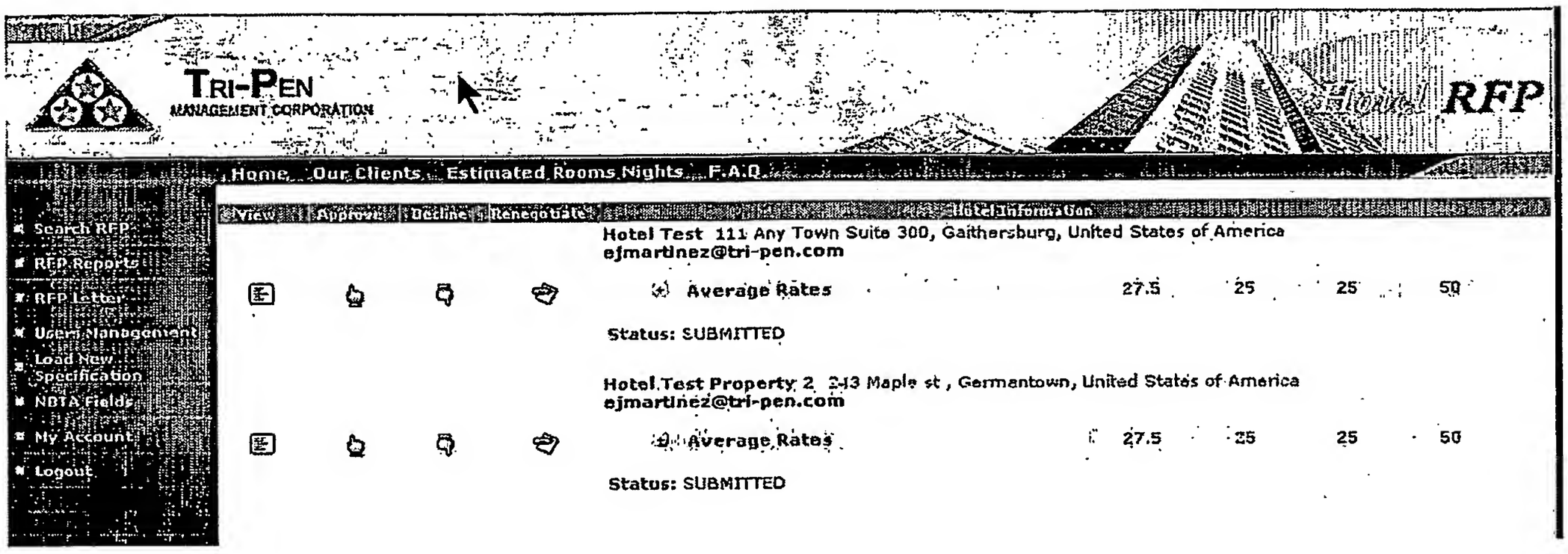

33100
33050
Built-in Reports
VoiceReports
InvoiceCosts
PRReports
DataReports
EquipmentReports
33010
Dynamic Reports
HTMLRender
PDFRender
XMLRender
QueryBuilder
ReportRender
ReportHandler

Figure 34



34100

Figure 35

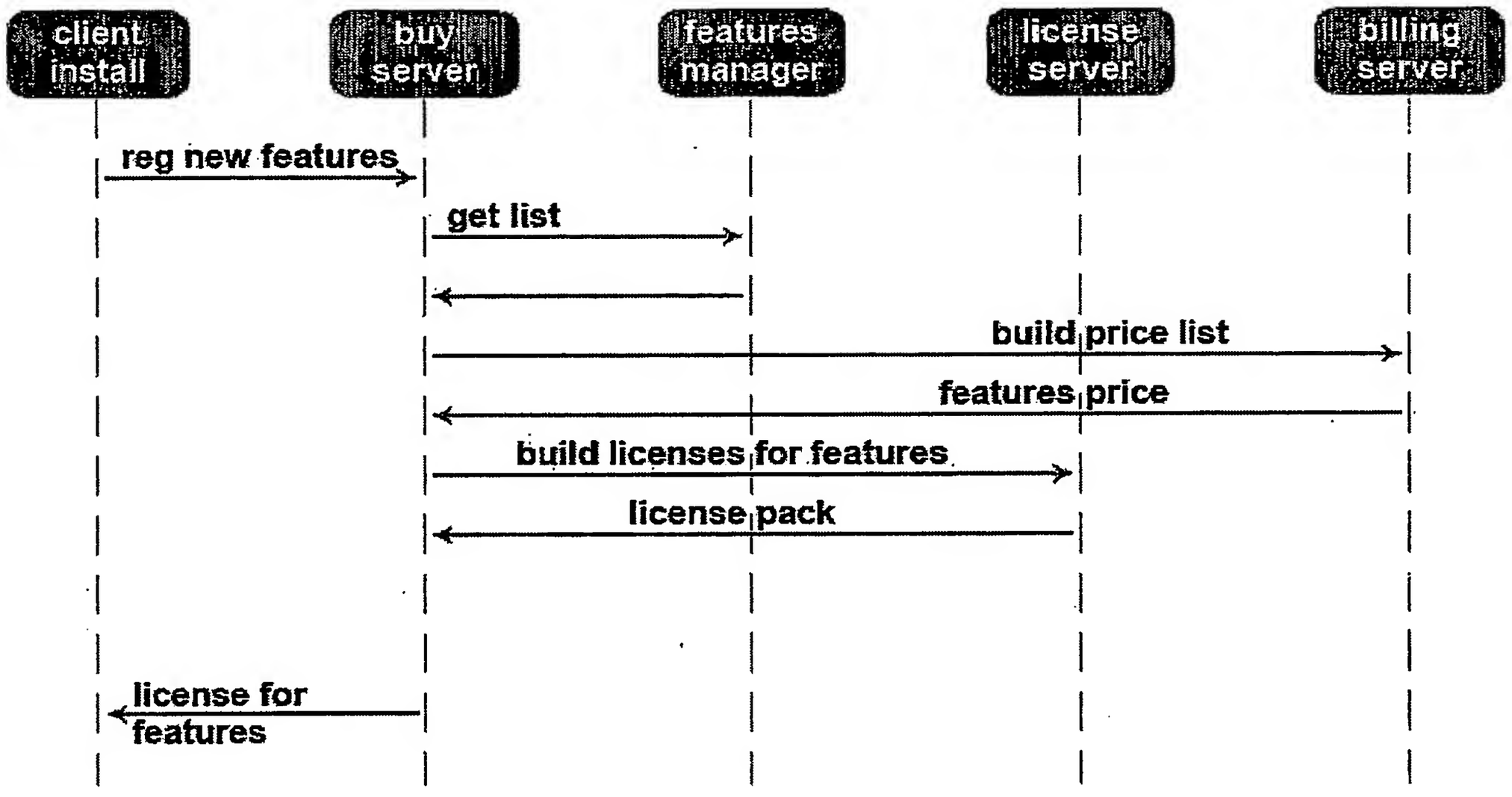

client install
buy server
features manager
license server
billing server
reg new features
get list
build price list
features price
build licenses for features
license pack
license for features

Figure 36

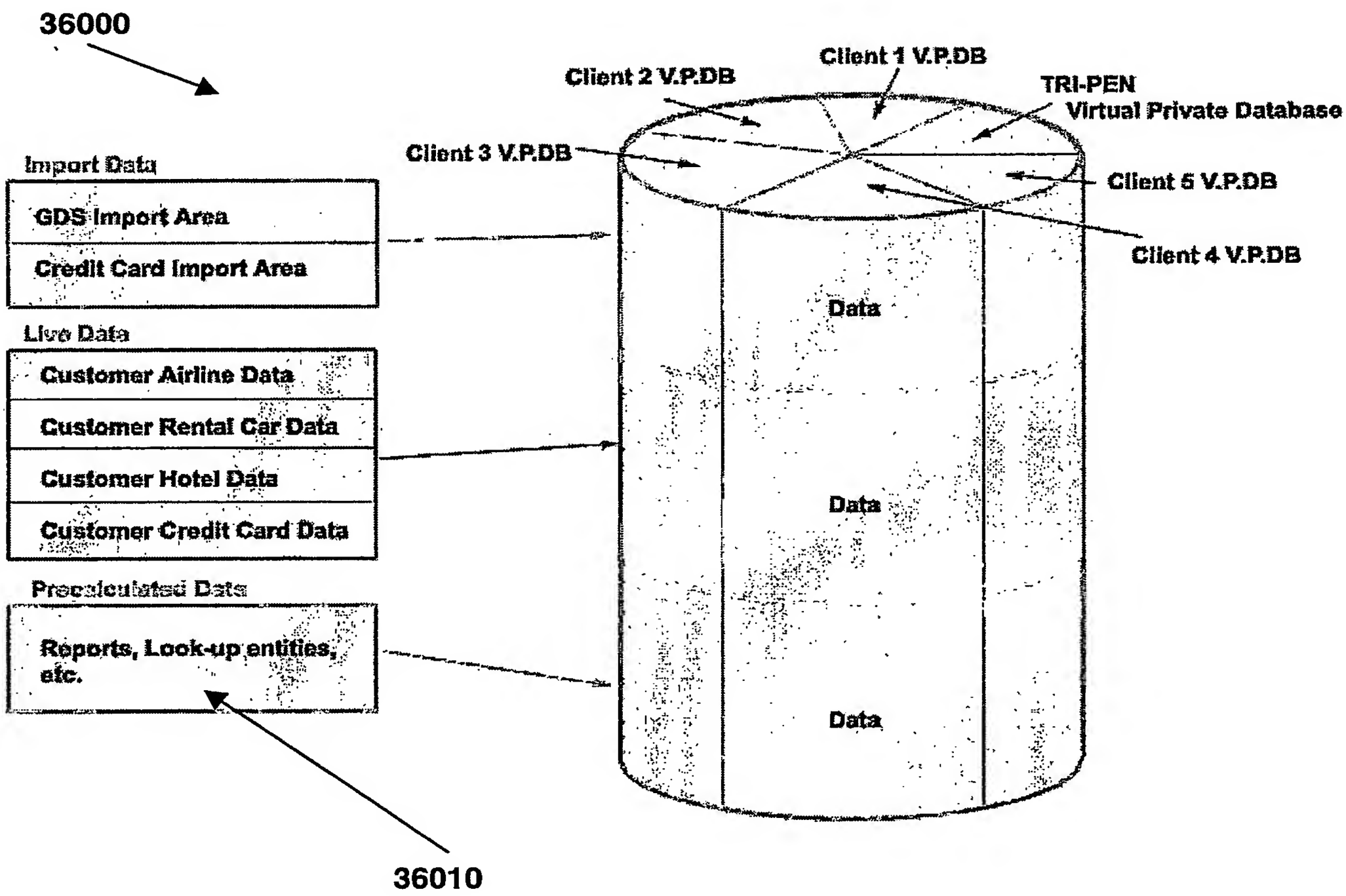

Database Diagram
36000
Client 1 V.P.DB
Client 2 V.P.DB
TRI-PEN
Virtual Private Database
Client 3 V.P.DB
Client 5 V.P.DB
Client 4 V.P.DB
Import Data
GDS Import Area
Credit Card Import Area
Live Data
Customer Airline Data
Customer Rental Car Data
Customer Hotel Data
Customer Credit Card Data
Precalculated Data
Reports, Look-up entities, etc.
Data
Data
Data
36010

Figure 37

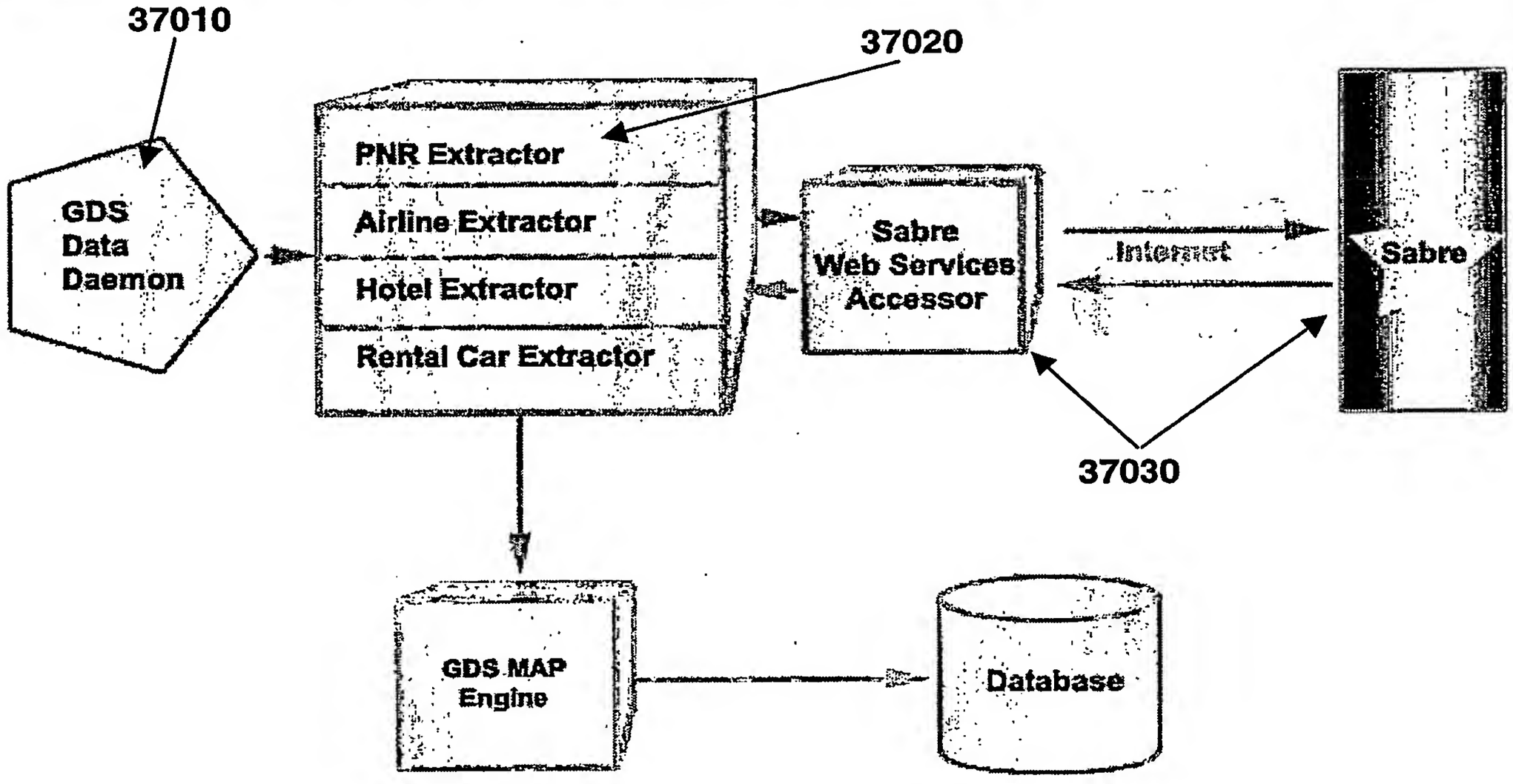

Pass Through of Direct Commands Within GDS
37010
37020
GDS
Data
Daemon
PNR Extractor
Airline Extractor
Hotel Extractor
Rental Car Extractor
Sabre
Web Services
Accessor
Internet
Sabre
37030
GDS MAP
Engine
Database

Figure 38

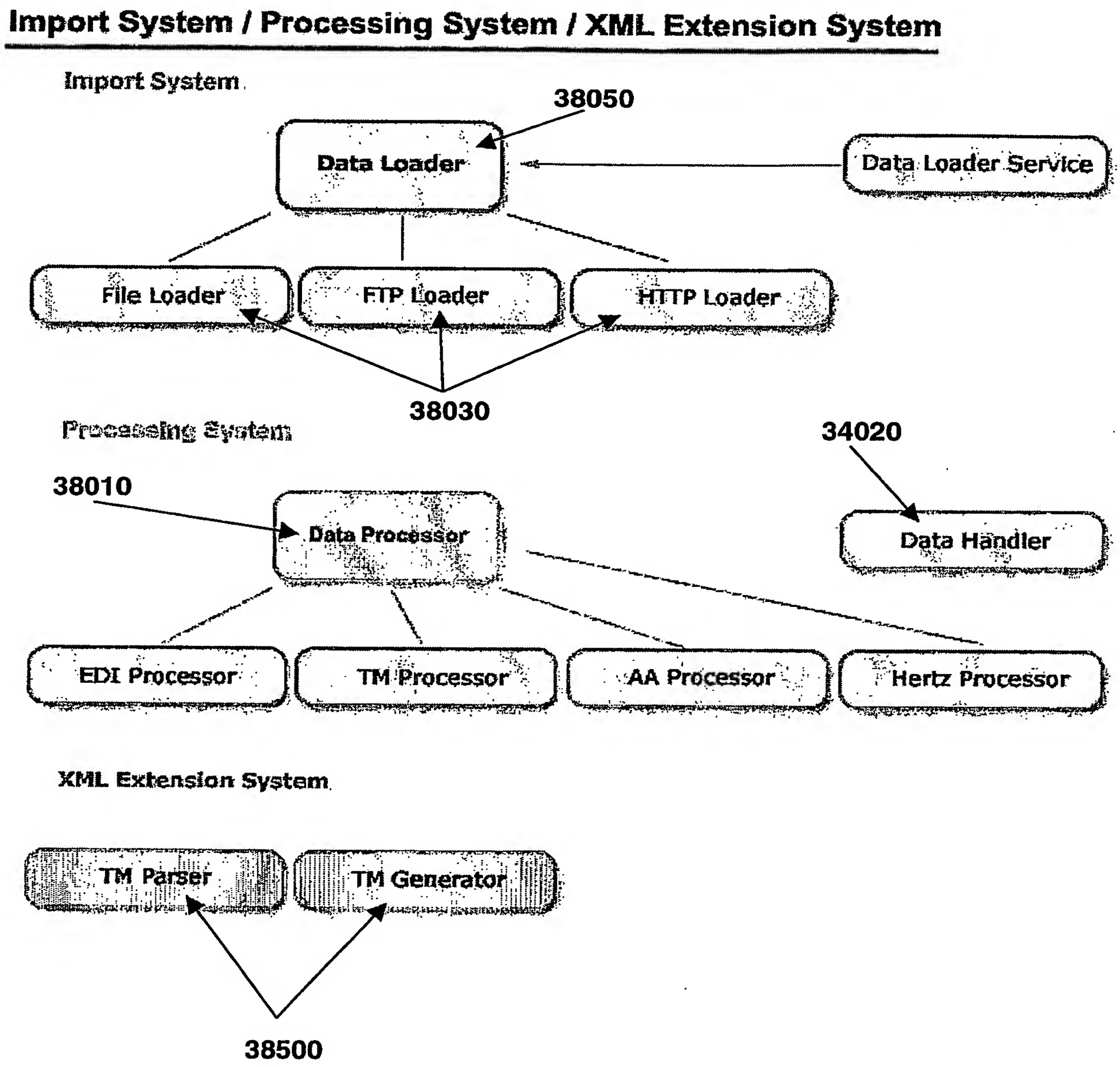

Import System / Processing System / XML Extension System
Import System
38050
Data Loader
Data Loader Service
File Loader
FTP Loader
HTTP Loader
38030
Processing System
34020
38010
Data Processor
Data Handler
EDI Processor
TM Processor
AA Processor
Hertz Processor
XML Extension System
TM Parser
TM Generator
38500

Figure 39

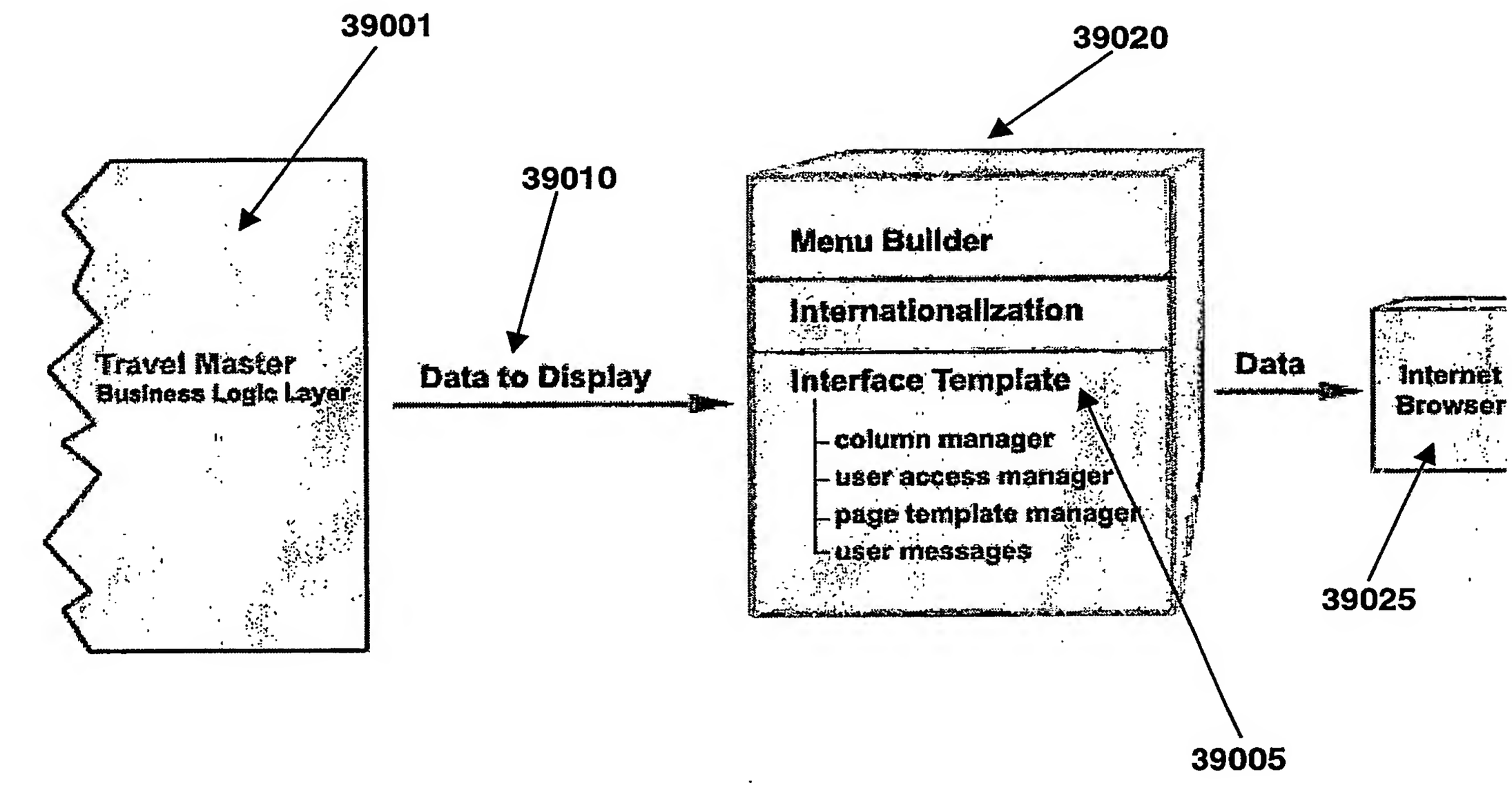

Layout Manager
39001
39020
39010
Travel Master
Business Logic Layer
Data to Display
Menu Builder
Internationalization
Interface Template
column manager
user access manager
page template manager
user messages
Data
Internet
Browser
39025
39005

Figure 40

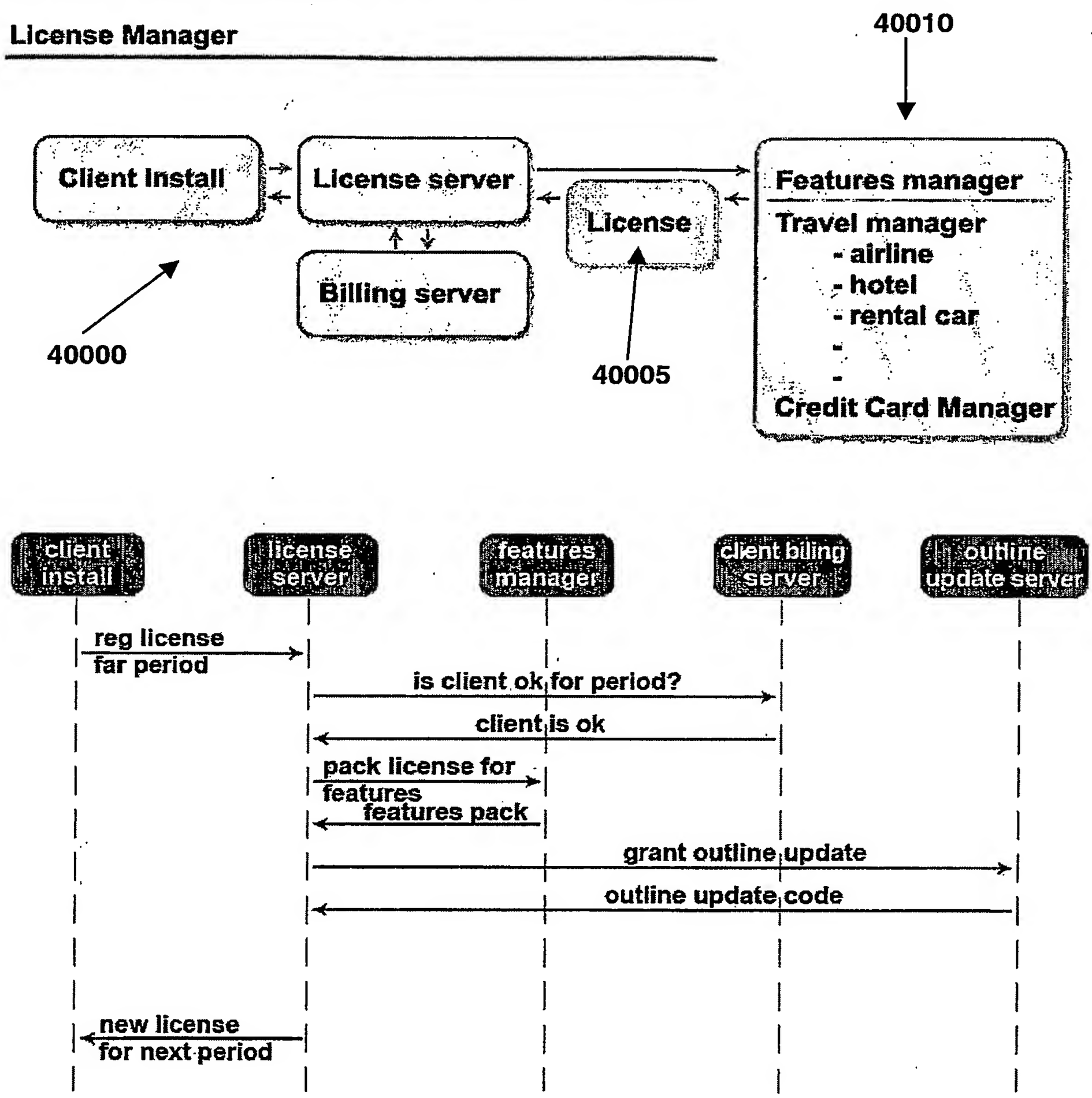

License Manager
40010
Client Install
License server
Billing server
License
Features manager
Travel manager
- airline
- hotel
- rental car
-
-
Credit Card Manager
40000
40005
client install
license server
features manager
client biling server
outline update server
reg license far period
is client ok for period?
client is ok
pack license for features
features pack
grant outline update
outline update code
new license for next period

Figure 41

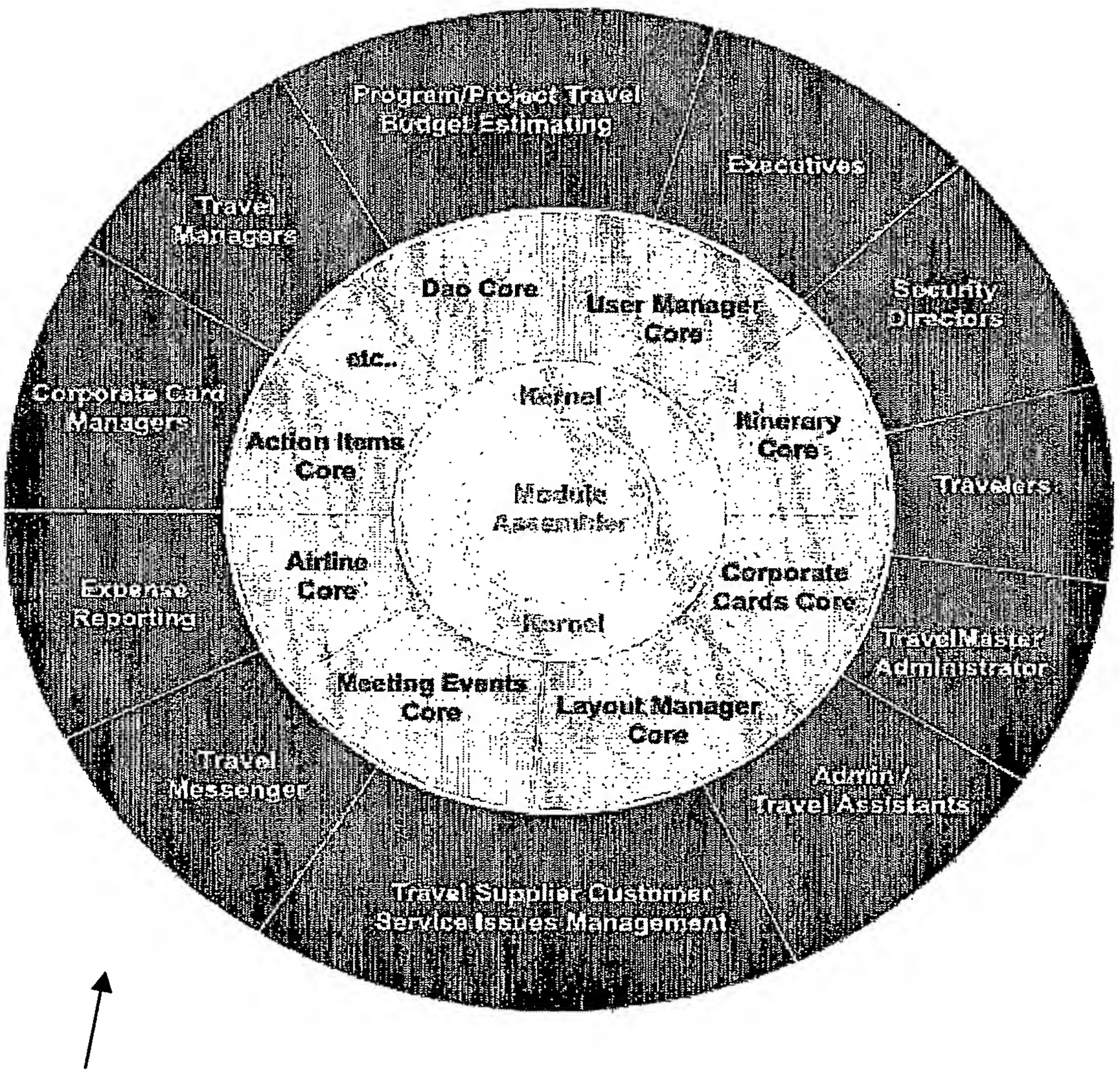

Plug In Manager
Program/Project Travel Budget Estimating
Executives
Travel Managers
Security Directors
Dao Core
User Manager Core
etc..
Kernel
Corporate Card Managers
Itinerary Core
Action Items Core
Travelers
Module Assembler
Airline Core
Corporate Cards Core
Expense Reporting
Kernel
TravelMaster Administrator
Meeting Events Core
Layout Manager Core
Travel Messenger
Admin/ Travel Assistants
Travel Supplier Customer Service Issues Management
41010

Figure 42

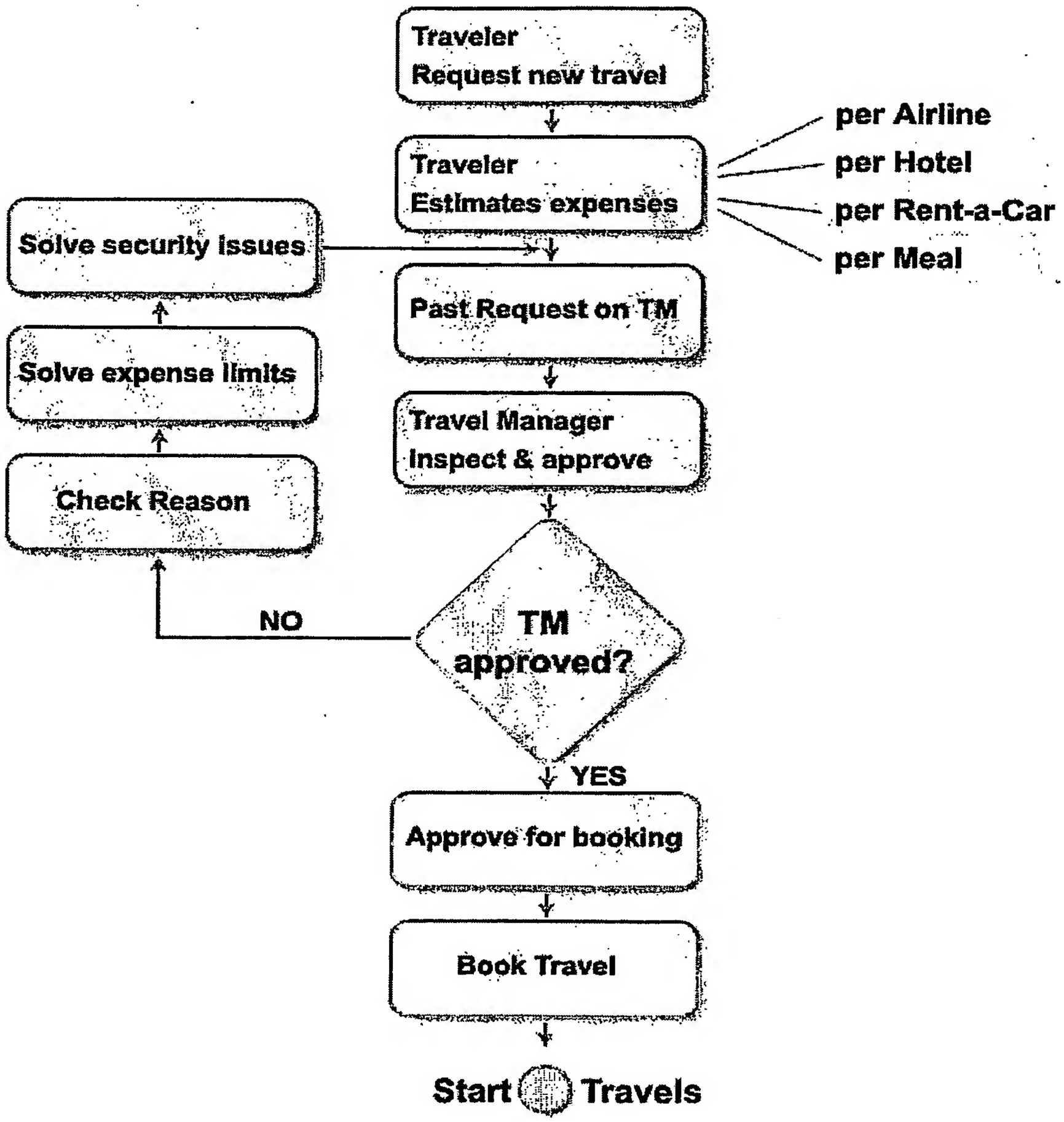

Pre Travel Process
Traveler
Request new travel
Traveler
Estimates expenses
per Airline
per Hotel
per Rent-a-Car
per Meal
Solve security issues
Past Request on TM
Solve expense limits
Travel Manager
Inspect & approve
Check Reason
TM
approved?
NO
YES
Approve for booking
Book Travel
Start Travels

Figure 43

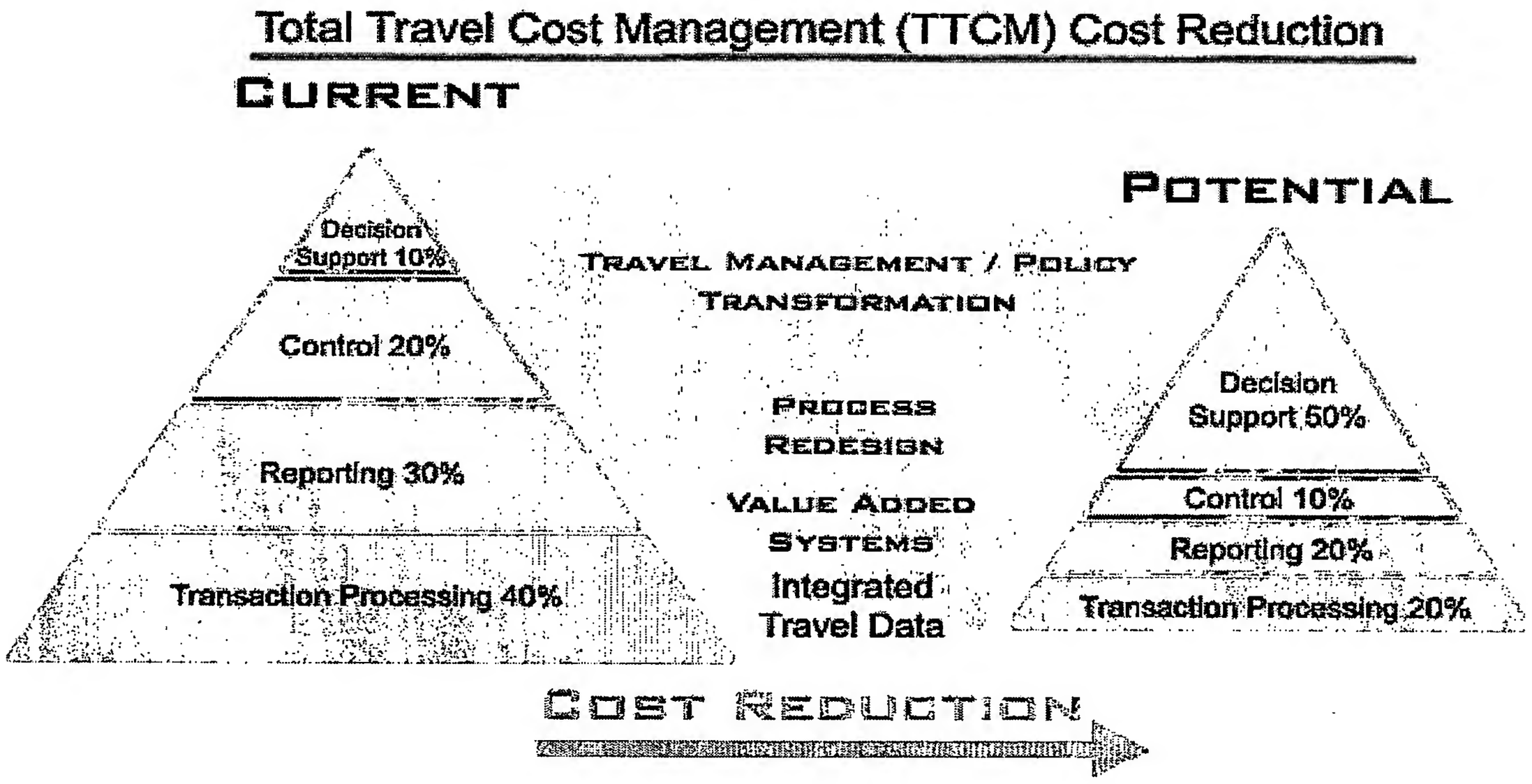
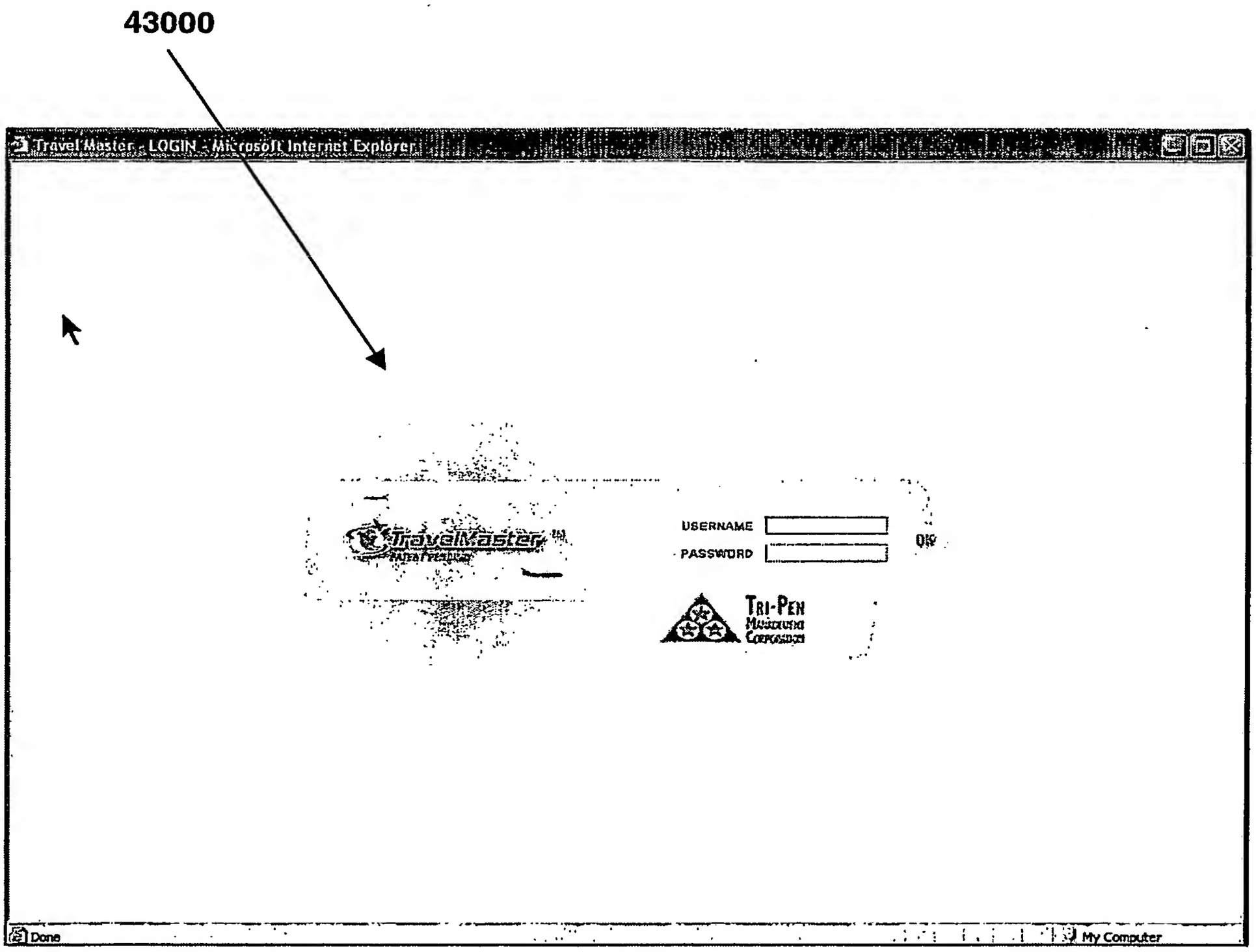

Total Travel Cost Management (TTCM) Cost Reduction
CURRENT
POTENTIAL
Decision Support 10%
Control 20%
Reporting 30%
Transaction Processing 40%
TRAVEL MANAGEMENT / POLICY TRANSFORMATION
PROCESS REDESIGN
VALUE ADDED SYSTEMS
Integrated Travel Data
Decision Support 50%
Control 10%
Reporting 20%
Transaction Processing 20%
COST REDUCTION

Figure 43

Web Based Portal Entry to the TravelMaster System